Exchanging the Implications of Changing Legislation for Communal Drinking Water and Wastewater Systems in Ontario’s Rural Communities

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Executive Summary

Water resource management in rural communities is of vital importance. One large aspect of this is private water servicing. Communal systems in particular have undergone significant regulatory changes for both drinking water and wastewater systems. For small drinking water systems, this has meant a change in monitoring requirements, sampling, as well as reporting specifications. The changes in regulations have impacted three groups of stakeholders including municipalities, public health units, as well as private owners. Through key informant interviews with these groups of stakeholders throughout southern Ontario, it became clear that there are implications of changing legislation for rural communities.

This research was undertaken through two main data collection processes; a document review of relevant legislation, and key informant interviews with subject matter experts from municipalities, public health units, as well as the private sector. The data collected through these research methods provided interesting insights into how changing legislation has impacted private communal water system development in Ontario.

The changes in drinking water regulations have resulted in significant changes to the monitoring requirements of drinking water systems. The downloading of these responsibilities from the province to the public health units created a tense transition period. Public health units can now be more proactive about monitoring as they have conducted initial risk assessments and better understand how many and what type of operations are occurring in their jurisdiction. Furthermore, it appears that most private owners have good relationships and communication with the public health units, which indicated that to at least some extent, the downloading of monitoring has been successful.

Changes in regulations surrounding wastewater system development have significantly impacted how development occurs in rural Ontario. This has mainly come in the form of Municipal Responsibility Agreements. Municipalities must sign one of these agreements to ensure that adequate liability measures are accounted for whenever development based on a wastewater system that is year round and communal in nature is proposed. By increasing the liability for municipalities (as opposed to the province who has resources that are more capable of dealing with communal servicing), they are more reluctant to enter into one of these agreements. As a result, many municipalities are promoting development in areas already serviced or, on an individual site basis. This conflicts with the servicing hierarchy set out in the Provincial Policy Statement (PPS) where communal servicing is preferred over individual. The inability of municipalities to conform to the PPS could have an impact on sustainable development objective in rural Ontario.

There were indications from all three groups of stakeholders that provincial involvement and aid are significantly lacking in rural communities. For public health units, this lack of support was mainly during the initial changes in regulations. All stakeholders indicated that if a similar downloading was to occur for wastewater systems, significantly more resources would need to be available from the province. For municipalities, there is no educational support regarding Municipal Responsibility Agreements, and hence, many jurisdictions do not understand the proper way to draft one while maintaining a balance of liability coverage and economic growth. For wastewater development, private owners suggested that their contact with the province is minimal,
especially in comparison with their drinking water systems that are regulated through the province as opposed to the public health units.

There appears to be a lack of communication between all groups of stakeholders when it comes to understanding the other group’s perspectives around this type of water system development. Having provincial authorities provide more educational resources and support when municipalities are looking to approve development requiring communal services would reap positive benefits for all stakeholders. An evaluation of the approval process has determined that under the current regulatory regime, communal servicing is ultimately discouraged through multiple barriers to approval and as a result, the Provincial Policy Statement is not being implemented to its fullest potential creating a situation where sustainable economic development is compromised in rural Ontario.
1.0 Background

Private water resource development has been occurring in Ontario for decades and represents important infrastructure for a vital service. Many of these developments are in rural areas. In an urban area, because of economies of scale, having municipally owned, managed, and operated drinking water and wastewater treatment systems is not unusual. However, within the rural context, developing the infrastructure for municipally owned and managed water servicing is extremely expensive and not always feasible. Changes to water resource legislation has resulted in implications for this industry. However, there is extremely limited academic information relating to private water resource systems in rural Ontario and as such, the main focus on the background section of this research focused upon policy. This section provides an overview of water governance in Ontario and how it has ultimately led to the planning problems this research is attempting to explore. For the purposes of this research it is extremely important to specify what is meant when referring to private systems. As drinking water and wastewater systems fall under different legislation, it is necessary to define each. Private drinking water systems are referring to any non-municipal system that has more than five service connections supplying water at a rate of 2.9 litres per second, or is one that is open to the public. Private wastewater systems are those with a design capacity in excess of 10,000 litres per day and are servicing multiple units, or those open to the public. Individual well and septic systems servicing individual private residences with limited capacity are not the focus of this research.

This section is broken down into four segments: the background of water resource management in Ontario; recent changes implemented through new legislation; the impact of those changes (based on preliminary interviews); and the planning problems that they
present for rural communities. By understanding the background of the changes in the Ontario policy landscape, the planning problems that are identified become credible.

1.1 Water Resource Management in Ontario

The efficient management and delivery of safe water resources to end users to fulfill a variety of purposes, is an extremely important service to provide in order for society to function effectively. Within an urban capacity, because of economies of scale and the small distances required for infrastructure to reach, providing drinking water and wastewater services for a relatively reasonable cost is feasible. When examining this planning function in a rural capacity, providing this service at an appropriate cost becomes more difficult. With less of a population to serve, rural communities are more dispersed than urban, and as a result providing infrastructure for these communities can become quite expensive. Furthermore, the regulatory requirements for comparable rural and urban systems have always been the same. Providing this service will only become more difficult as factors including ageing infrastructure, population growth, and climate change become more prevalent in the future (Brubaker 2011). Finding specific, reliable figures of pollution caused by private water systems in Ontario is nonexistent. However, of all wastewater systems in Canada (both public and private), it is estimated that more than 150 billion litres of raw sewage, and about 1.35 trillion litres of partially treated sewage are released into Canadian waterways every year, making them the largest source of aquatic pollution in the country (Brubaker 2011). With about 40% of the population in Canada found in Ontario, and its proximity to vital fresh water resources, addressing this source of pollution in Ontario becomes critical. Although this pollution figure includes all systems, municipalities need to be aware of private operators in their jurisdiction, especially in rural areas where these systems are more widespread, as they can be a
potentially significant source of pollution. Not only does it represent a threat to the environment, but also human health as wastewater systems have the potential to contaminate drinking water sources if they are not managed appropriately.

Within Ontario, private ownership of water systems is said to have dated back to as early as 1837, when the first piped water supply from Lake Ontario was established in Toronto (OSWCA 2001). Private communal systems were originally established for singular purposes, such as combating fire (OSWCA 2001). Between this time and 1950, through the Municipal Act, the Municipal Waterworks Act, as well as the creation of the Ontario Water Resource Commission, municipal servicing has been the major focus of government (OSWCA 2001). Private development was largely unrestricted by regulatory measures from municipalities or the province, and as such, in many rural areas where municipal servicing is less viable, numerous small private systems emerged to service a variety of interests. The Ontario Water Resource Commission was eventually transformed through the Ontario Water Resources Act, with delegation for water management being given to the Ministry of Environment and Climate Change (MOECC formerly MOE) since the nineteen seventies (OSWCA 2001). Currently, it is estimated that there are roughly 18,000 privately owned and operated water systems in rural Ontario. This represents tens of millions of dollars worth of direct investment, as well as indirect investment for rural communities that is facilitated by these operations that, if not serviced privately, may not have been able to be developed.

Historically the main piece of legislation governing private water resource management has been the Ontario Water Resources Act (1990), with authority delegated to the MOECC. This act covers the obligations for wastewater operators, historically only
for larger systems. Its main function, relating to private water resource management, was for larger operators to gain a certificate of approval (COA equivalent to a current Environmental Compliance Approval (ECA)) showcasing the ability for them to perform their operation without endangering the surrounding water sources. Historically for smaller private systems, there has been no regulatory regime that they fell under and consequently, many of these systems to service rural communities have been established.

Private drinking water and wastewater systems in rural Ontario communities represent potential opportunities for economic development where municipal servicing may not be feasible. This is reflected in the main piece of planning legislation, the Provincial Policy Statement (PPS), that promotes municipal services as most desirable, and if not feasible, then communal servicing should be pursued, followed lastly by individual servicing (PPS 2014). For a variety of factors ranging from inadequate funds available, to lack of expertise, providing municipal servicing to all communities and developments in rural Ontario is not realistic. Privately owned and operated systems are common to find for both seasonal and year round facilities including campgrounds, trailer parks, rural resorts, rural residences, as well as commercial businesses. These projects can potentially (not always) provide tax revenue for municipalities through property tax that would otherwise not be there without the development. However there are often issues surrounding liability when it comes to public health concerns and environmental contamination under this type of management framework. In the year 2000, these issues culminated into a tragic event that led to significant changes in water resource management in Ontario. In Walkerton, Ontario, \textit{E.coli} contamination resulted in seven fatalities and twenty-three hundred other cases of people becoming ill due to the
contaminated water supply (Qua-Enoo 2008). There were numerous factors that influenced this circumstance, including heavy rainfall, a damaged well system, and improper management and monitoring by the operators. Although this was a municipal system that was operated by public sector staff, sweeping regulatory changes that would incorporate the private sector to a much larger extent were undertaken. The province was under pressure to address potential water contamination, with specific emphasis on protecting water at the source. This tragedy led the province to review how it managed water resources and propelled significant changes that have had an impact on private water system development.

1.2 Recent Regulatory Changes

When legislation becomes implemented, too often there is an emphasis to move onto the next problem without adequately evaluating the impacts of that legislation, and to ensure it is having the desired impact without inadvertent consequences for stakeholders. Based upon an extensive document review of the legislation relating to water resource management, as well as preliminary interviews with subject matter experts, only the specific pieces of legislation that have had the largest impact on private water resource operations will be examined. In the realm of private water resource management in Ontario, there are various layers of legislation and regulations spanning across three main government stakeholders: local municipalities, the MOECC, as well as the Ministry of Health and Long-Term Care (MOHLTC). Figure 1 and Figure 2 provide visual representations of the regulatory breakdown for both drinking water systems as well as wastewater systems in Ontario.
Figure 1: Regulatory breakdown of drinking water systems management.
1.2.1 The Provincial Policy Statement

Examining the Provincial Policy Statement (PPS) is essential when examining land-use planning issues. The PPS guides planning within Ontario and every Official Plan (OP) within all municipalities must conform to the latest version of the PPS.
Therefore, understanding how it promotes the hierarchy of water utility servicing is essential. To reiterate, section 1.6.6.2 – 1.6.6.4 of the PPS states:

1.6.6.2 Municipal sewage services and municipal water services are the preferred form of servicing for settlement areas. Intensification and redevelopment within settlement areas on existing municipal sewage services and municipal water services should be promoted, wherever feasible.
1.6.6.3 Where municipal sewage services and municipal water services are not provided, municipalities may allow the use of private communal sewage services and private communal water services.
1.6.6.4 Where municipal sewage services and municipal water services or private communal sewage services and private communal water services are not provided, individual on-site sewage services and individual on-site water services may be used provided that site conditions are suitable for the long-term provision of such services with no negative impacts. In settlement areas, these services may only be used for infilling and minor rounding out of existing development.

1.2.2 The Safe Drinking Water Act

The Safe Drinking Water Act (2002) is in essence, the response from the Province of Ontario to the Walkerton tragedy. The implications of this legislation are a potential contributing factor that has led to the planning problems this research attempts to explore. This will be discussed in further detail in the analysis section. The MOECC, under the Safe Drinking Water Act, gives the Director the ability to issue an order relating to private water systems that have problems concerning their operation and may be likely to default, forcing municipalities to take it over. As is the nature of an order, municipalities are unable to negotiate with the MOECC. Under section 114 of the Safe Drinking Water Act, the Director may issue a written order in one or more of the following circumstances requiring a municipality to provide servicing for a private system:

1. There has been a failure or refusal to comply with an order issued under this Act in respect of a deficiency in a regulated non-municipal drinking water system or privately-owned municipal drinking water system that serves the major residential development and the Director is of the opinion that the continuing use of the system will result in a
drinking water health hazard.
2. There is a deficiency in an abandoned regulated non-municipal drinking water system that serves the major residential development and the Director is of the opinion that the continuing operation of the system will result in a drinking water health hazard.
3. The municipality granted a consent for a non-municipal drinking water system under section 53 in respect of the major residential development and there continues to be a deficiency in the system because,
   i. the system is abandoned, or
   ii. the owner of the system has failed or refused to comply with an order that relates to the deficiency.
4. The Director is of the opinion that the major residential development requires servicing by a municipal drinking water system in order to protect residents from a drinking water health hazard. (*Safe Drinking Water Act 2002* c. 32, s. 114 (1))

When this legislation was enacted, the Association of Municipalities Ontario (AMO) highlighted this as a pressing issue, believing it was inequitable to force municipalities to be financially responsible for a private operators system if they simply walk away or are unable to conform to regulatory requirements in delivering clean water (AMO 2013). Section 114 of the *Safe Drinking Water Act* is a main component that has caused significant impacts for various stakeholders.

1.2.3 Health Protection and Promotion Act

The *Health Protection and Promotion Act* is where small drinking water operators are ultimately told their obligations as owners. Under section 12.1(1), a medical officer of health has the ability to change requirements on a temporary basis that an owner must abide by. This legislation would allow members from the local public health unit to give an owner directives if there was an immediate health hazard. The mandate of the public health unit was not to take a proactive approach at this time, but rather a reactive one to systems that had issues surrounding their use and operation.
1.2.4 Ontario Regulation 170/03
Ontario Regulation 170/03 relates to drinking water systems and is administered under the Safe Drinking Water Act. Schedule two under this act is important to private owners. This is where non-municipal year round residential, seasonal residential, large non-residential, and small non-residential systems are covered. This incorporates a significant number of the communal water systems found in rural Ontario. The owner has the following general obligations: any well serving as an entry point of raw water supply is constructed and maintained to prevent surface water and other contaminants from entering; water treatment equipment is provided; treatment equipment is in operation when water is being supplied; equipment is in accordance with the Ministry’s Procedure for Disinfection of Drinking Water in Ontario (MOECC 2003); equipment is proficient in achieving design capabilities; and that equipment is operated so free chlorine residue is never less than 0.05 milligrams per liter. Further requirements of an owner include: ensuring equipment is maintained; written operating instructions are available; and only trained operators are able to adjust the water treatment equipment. The act also covers the responsibilities of owners if they are preparing a site for primary or secondary treatment. These changes significantly altered the regulatory requirements for larger systems and as such have led to impacts for different stakeholders.

1.2.5 Ontario Regulation 319/08
Ontario Regulation 319/08 was intended to bring small drinking water operators under the regulatory umbrella of the Health Protection and Promotion Act (MOHLTC 2008) in a more meaningful way that takes a proactive approach to risk assessment. Local public health units under this regulation are now responsible for conducting initial risk assessments on all of the small private water systems in their jurisdiction. This is
potentially the most important regulation for owner/operators to examine that are operating a smaller communal drinking water system. Although this regulation does cover individual systems such as well and septic, the focus of this research is on communal systems and as such, individual systems will not be discussed. It defines the responsibilities of a small drinking water system owner, as well as monitoring requirements. Before the owner supplies water to the users, they need to notify the Medical Officer of Health from the public health unit where the drinking water system is located. They need to indicate the building permit number, whether or not all the necessary planning to operate the water system has occurred (as well as abiding by any directive issued during construction or planning stages), the date the system will supply drinking water to users, as well as the personal information from the owner. This regulation is extremely important and highlights the major responsibilities of MOHLTC in terms of monitoring private water systems proactively. It is much more extensive than the Health Protection and Promotion Act, providing a clearer mandate for the public health units. Monitoring, under this regulation, is to be conducted at the local level by public health inspectors (PHI). As mentioned previously, the PHI’s are responsible for conducting an initial risk assessment for all systems in their jurisdiction as well as issuing directives. Furthermore, they are responsible for education related to the responsibilities of an owner to ensure that they had the support necessary to conform to regulatory requirements.

1.2.6 The Ontario Resources Act

The main changes in the Ontario Water Resource Act come in the form of an amalgamated ECA replacing various other approvals including a COA. Section 53 lays out the obligations for an owner to receive an ECA. Any business or owner must have an
ECA from the MOECC if the activity it conducts releases pollutants into the air, land or water, or if they are storing, transporting, or disposing of waste (Government of Ontario 2012). This covers many small wastewater systems operating within rural Ontario. However, not all systems have an approval and are likely currently operating on a “grandfathered in” basis. There is minimal discussion regarding the monitoring requirements of an owner aside from the fact that MOECC can issue an order to an owner specifying any monitoring requirements. There is currently no proactive approach to public monitoring of private wastewater systems through regulations similar to those found under Ontario Regulation 319/08 for drinking water systems.

1.2.7 Procedure D-5-2: Application for Municipal Responsibility Agreement for Communal Water and Wastewater Services

A municipal responsibility agreement (MRA) may be required by MOECC in order to issue approval for a private water system. They are executed under Procedure D-5-2: Application for Municipal Responsibility Agreement for Communal Water and Sewage Services (MOECC 1995). They are typically required for larger communal wastewater systems that are renewing or applying for a new ECA as opposed to water supply systems. It should be noted that seasonal developments do not need to have an MRA in place in order to receive an ECA. However, this has led to issues surrounding systems that operate past the seasonal restrictions, but under the regulatory regime are still operating as seasonal systems. Therefore, in the future it is possible that there could be conflict regarding an owner of a seasonal development requiring an MRA. This topic is explored further in the data analysis section.

This agreement is essentially a liability agreement between the municipality and the owner/operator. The purpose of this agreement is to ensure that in the case of a
defaulting system (for example where MOECC issues an order requiring a municipality to take a system over due to non-compliance) there are adequate resources available for the municipality to take over the system without having the cost to tax payers. These agreements can be diverse between municipalities and can include a number of stipulations regarding monitoring and maintenance of a system. They are intended to ensure that any future or expanding existing development is designed and constructed appropriately, as well as operated and maintained effectively. The operation and maintenance of a system is a large component to its overall sustainability. Regular maintenance ensures that the likelihood of large infrastructure repairs is minimal, and effective operation ensures that health risks are minimized. For municipalities, determining the adequate amount of liability stipulated while balancing economic development opportunities in their jurisdiction is a critical component to the success of a MRA. Although MOECC provides a general guideline for developing these agreements, the details and specifications are let up to the municipality in an attempt to allow them to adapt the MRA’s to their own needs. MRA’s are a way for MOECC to decentralize decision-making to local municipalities, but are also appear to be a way of downloading any associated liability. This will be explored further in the data analysis.

1.3 Impacts of Recent Changes

There are various impacts to all groups of stakeholders that are the result of changes to water resource legislation in Ontario. Whenever legislation is implemented that has such a large-scale goal, evaluating its effectiveness and revealing both positive and negative impacts is crucial. From a planning perspective, understanding the practical problems at the local scale allows one to make credible recommendations for solutions. As discussed previously, the existing literature on the impacts of these regulatory changes
is minimal. To address this deficiency, the following information was retrieved from preliminary interviews with affected stakeholders as well as a review of relevant regulations. In this section, when identifying the impacts of recent regulatory changes, the intention is not to understand the implications for stakeholders as a result of these changes. The implications will be discussed in the analysis and discussion sections of this paper. The intent in this section is rather to demonstrate how the management framework of communal water systems has shifted as a result of these changes. The three main groups of stakeholders discussed will be private owners, municipalities, and public health units. This is displayed in figure 3.

Figure 3: A depiction of the main groups of stakeholders
1.3.1 Changes Regulatory Requirements for Private Owners

Under Ontario Regulation 170/03 and 319/08, owners of private drinking water systems became responsible for a new host of monitoring requirements. This included reporting requirements to the local public health unit or MOECC, sampling and monitoring requirements, as well as preparing maintenance records. Private operators were also required to have their samples tested at a MOECC approved third party independent lab. Historically, private operators of small operations could have their samples tested for free at the local public health lab. The changes in regulation also required small drinking water system owners to succumb to operating requirements and as such, hire a certified operator or become operators themselves. Some of the systems captured under Ontario Regulation 319/08 had never had any type of regulatory requirements imposed upon them. Understanding how they are now coping with these changes and how it is impacting development in rural Ontario will serve as a critical component addressed in the data analysis.

One of the largest changes for private owners was the requirement to engage to extensive training regiments to become a certified operator. In order to operate a regulated non-municipal system, one needs a valid certificate issued through Ontario Regulation 128/04 under the Safe Drinking Water Act. This regulation lays out the criteria for certification of drinking water operators and water quality analysts. It overviews the certification of operators detailing the different classes of operator permits as well as operator-in-training certificates. Depending on the type of system a private owner has, they may need extensive training to be an operator. Furthermore, for wastewater systems, the operator certification requirements are even more extensive and thus costly, not only financially but also in terms of time spent for an owner.
Not only did changes in regulation and legislative processes affect owners with drinking water systems, but also those with existing or proposing new development requiring communal sewage services. There is the potential to trigger a MRA if an owner is renewing their ECA for any purpose, or seeking approval for a new development requiring communal sewage services. This can require substantial upfront costs to be provided, potentially impacting economic development in a jurisdiction. It will be interesting if developers are attempting to navigate a way through the regulatory process for larger development that will not require a MRA. This could have a significant implication on whether or not development is consistent with the PPS. Through the interviews conducted with private operators, some of these issues will be elaborated upon.

1.3.2 Changing the Mandate of Local Public Health Units
The province of Ontario as well as the participating municipalities fund public health units. Therefore when changes are introduced, it is important for all stakeholders to ensure they are viable and implemented efficiently. Local public health units across Ontario had their mandates altered as a result of changes introduced under the Health Protection and Promotion Act. Under this act, Ontario Regulation 319/08 established the largest change for public health units. PHI’s received lists of small drinking water systems in their jurisdiction. They were responsible for performing initial risk assessments on all of the systems. This required PHI’s to receive more training relating to drinking water systems, treatment, as well as contamination. PHI’s had these additional duties imposed upon them while still obligating the public health units other responsibilities. Funding was made available for three years by the province in an effort to attempt to make the transition as smooth as possible. This was quite a substantial task.
for local public health units to take on as well as an important one, especially after the tragedy that had occurred in Walkerton. Public health units were under pressure to ensure they conducted risk assessments quickly and efficiently to address any immediate sources of contamination. From the interviews conducted with public health officials, we will understand firsthand accounts of how different public health units dealt with this transition of responsibilities and if there were any differences in strategy amongst the health units. It will also be interesting to determine the adequacy of provincial support during the downloading of monitoring responsibilities.

1.3.3 Increased Pressure on Municipalities

The changes in legislation introduced under the *Safe Drinking Water Act* and the *Health Protection and Promotion Act* have increased the responsibility and potential liability for municipalities. Aside from the additional obligations for public health units (which are funded in part by local governments), municipalities now increasingly responsible for a potentially defaulting water system. Not only does the MOECC have the power to order a municipality to take over a system under the *Safe Drinking Water Act*, they can require a MRA to be established. When MOECC requires a municipality to enter into a MRA in order for an owner of a water system to renew or receive their approval, this requires a municipality to put forth an effective agreement that allows a private owner to conduct their business while ensuring that if the system does default, the municipality will have adequate funds and expertise to operate. In rural Ontario, the ability of a municipality to take over a communal system effectively will likely vary, as municipalities will have different amounts of experience in this industry. Therefore, the nature of an MRA can differ substantially. Ensuring that the liability aspect is covered appropriately is an important factor, especially in the rural context where issues such as
low revenue, depopulation, and ageing infrastructure make governance challenging. This is a delicate balancing act between covering liability for the municipality and ensuring a private owner can operate their system in an economically viable method. In some rural communities, new developments may require an MRA in order to get an ECA issued by MOECC. This puts pressure on a municipality to get an MRA in place to stimulate economic growth that may otherwise not be available without the private servicing. In rural Ontario where economic development opportunities are critical to both social and economic sustainability, it becomes problematic if liability agreements potentially serve as a deterrent for development. If this is the case, then there is the potential that the hierarchy of servicing discussed in the PPS is not relevant within rural municipalities. Through the key informant interviews, these issues will become more clear.

Throughout all of the changes there is a theme of decentralizing power and responsibility for water servicing to the local level. This theme will be explored further in the data analysis and will likely yield interesting results when it comes to the perception of the province from local stakeholders who are substantially affected by these changes in legislation.

1.4 Research Problems

As a result of the significant changes to legislation, including the requirement for those who were previously unregulated to be incorporated into a system of regulatory requirements, as well as the requirement to potentially enter liability agreements, there have been planning problems for local rural municipalities that have arisen that this research attempts to explore. There are two major planning problems that arise as a result of the significant changes to water resource legislation in Ontario. Both revolve around
the concept of attempting to ensure that private systems do not default, leaving a financial burden on the municipality.

1.4.1 Increasing Regulatory Requirements and Downloading Monitoring Responsibilities for Drinking Water Systems

Under the Safe Drinking Water Act and the Health Promotion and Protection Act (Ontario Regulation 170/03 and 319/08, respectively), private owners who were largely unregulated previously, now need to collect samples and have them analyzed, maintain monitoring records, and have stringent reporting mechanisms in place. Because of this, if systems that were absorbed by the new regulations default, municipalities may be required to assume ownership. With so many systems and significant changes in regulatory requirements, it is inevitable that municipalities will have to deal with defaulting systems. In rural areas where investment in water resource infrastructure may be lacking compared to urban areas, as systems age, this problem is magnified. The planning problem becomes what to do now that the regulatory requirements have changed to prevent systems from defaulting, and thus, placing responsibility on municipalities. Furthermore, the issue extends to when a system defaults, and a municipality receives an order from MOECC, how to ensure the system is managed effectively. Ultimately the goal is to ensure that owners have the tools and resources necessary to run successful systems, reducing the impact on a municipality. Under the regulatory regime, there are various stipulations that private operators have to comply with. A solution must incorporate these challenges, especially for smaller operators, to ensure that the regulatory burden is not excessive. As the legislation has already been enacted that has the potential to cause small systems to default under enhanced regulatory
requirements, the solution to this problem will need to be reactive as opposed to proactive.

1.4.2 Potential Regulatory Changes Affecting Wastewater Systems

As previously discussed, the activity of wastewater servicing is a major contributor to pollution in Canadian watersheds. Especially within Ontario where aquatic ecosystems are abundant, these watersheds are of vital importance from an economic, environmental, and human health perspective. Significant regulatory changes have been undertaken with relation to the monitoring of drinking water systems, however wastewater systems have yet to come under similar scrutiny. The only monitoring requirements that will exist at the local level are contained within an MRA, which is not mandatory for all wastewater systems. Although MOECC may have stipulations when issuing an ECA relating to monitoring and reporting, preliminary interviews indicated that resources for local MOECC offices may not always be adequate to effectively verify all wastewater monitoring operations within their jurisdiction. Similar to drinking water systems, it is in the interest of the municipality if wastewater systems do not default, thus placing a financial and operational burden on the local government. The planning problem for a municipality is to be able to implement an MRA without compromising the ability to encourage economic growth, to ultimately ensure that the potential of a defaulting system is addressed. However even for systems where an MRA is not required, it is still a problem for municipalities to determine that balance as MOECC has the ability to issue an order, requiring them to take over any system. This problem is extremely relevant especially with the potential implementation of the proposed Great Lakes Protection Act, where reducing harmful algal blooms is a main goal (Conservation Ontario 2015), which could have significant implications for wastewater operators. The
goal here is to have a solution that allows a proactive approach to be taken to ensure that systems do not default, and that if an MRA is needed, the right balance of liability coverage and economic development can be struck.

2.0 Description of Project

This section provides an overview of the main components of this research. The research undertaken for this paper is part of a larger project that is examining the impact and importance of private water systems across Ontario. This section will detail the main components of the project, the scope of the research, the rationale for the research, as well as the ultimate goal this research is attempting to achieve. After understanding the basis of this research it will be clear how the planning problems above will be addressed.

2.1 Overview of the Research

The larger project that this research is contributing to is being undertaken in three main phases consisting of the following: a review of legislation and regulations relating to private water system development in Ontario; in-depth analysis of case studies from across Ontario; and finally a provincial wide survey attempting to provide regional input into the policy process for this type of development. This research is part of the second phase, the in-depth analysis of case studies. By providing a narrative of how these systems operate, the local approval process, as well as their perceived opportunities and costs, one can begin to understand how changes in legislation are ultimately manifesting for local stakeholders. This research has attempted to gather the input from three different perspectives including the municipality (reflected through council members, planners, Chief Administrative Officers (CAO), and Chief Building Officials (CBO)), the local public health unit (reflected through PHI’s, managers of environmental health), as well as
the private sector (reflected through private owner and/or operators). Within the analysis section, the data representing each stakeholder group will be represented and clearly organized based upon the main themes that arise.

2.2 Scope of the Research and Case Study Locations

As per the second part of this research project, in-depth analysis of case studies, this research is looking at southern Ontario. For this section of the project, Ontario has been broken into two parts: north and south. Anything south of Parry Sound and Nipissing counties is considered southern Ontario for the purposes of this project. A subsequent researcher will examine counties in northern Ontario. This research examines five case studies from southern Ontario, with a larger emphasis on the southeastern parts. This includes data collected from Bruce County, Wellington County, Peterborough County, Prince Edward County, as well as the County of Renfrew. Figure 4 represents a map showcasing the study areas. Within Ontario, municipal governance is applied on either a two-tier or a single-tier basis. A two-tier basis signifies that governance is undertaken at both the county and township level, where each township within a county must conform to the county’s policies. A single-tier system is where the county is responsible for governance in their respective jurisdiction. For this specific research, both single-tier and two-tier municipalities were included in the case studies. Within two-tier municipalities, attempts to gather information from one township were undertaken. However, due to the lack of subject matter experts, in some cases of two-tier municipalities, data was collected from two townships. To protect the confidentiality of the participants involved in the study, case studies will be depicted according to figure 5. Bruce County and Wellington County will comprise south central Ontario, while Prince Edward County, Peterborough County and the County of Renfrew will comprise
southeastern Ontario. This still allows for interesting comparisons to take place without compromising the privacy of the study participants. Each case study will be detailed below, with specific interest to their respective OP’s. In a two-tier municipality, OP’s at the upper tier generally dictate OP’s at the lower tier. Therefore only the OP’s at the County level will be examined within these areas.

Case Study Locations

Figure 4: Locations of case studies across southern Ontario (GFO 2015).
2.2.1 Bruce County

Bruce County is located along the shoreline of Lake Huron. It stretches across 2400 KM of Lake Huron’s coast, representing a significantly large exposure of a vital fresh water source (County of Bruce 2015). Because of their proximity to this large water body, it is vitally important private water systems are managed appropriately. According to their OP, most future developments in the County will be on municipal or communal servicing systems, with limited growth on private water supply and sewage disposal systems (County of Bruce 1997). It is clear from Bruce County’s OP that they are
following the direction of the PPS. If this is occurring in practice will be revealed in the data analysis.

2.2.2 Wellington County
Wellington County is in close vicinity to major water sources. They work closely at times with the Grand River Conservation Authority for example to ensure water quantity and quality is protected. Figure 6 provides an overview of the boundary of the Grand River Watershed, and an approximate location of Wellington County within it. This watershed is of vital importance to the municipalities within its boundaries as it provides drinking water for many communities, flood control, is home for many species at risk, as well as the locations of numerous wastewater treatment systems (GRCA 2015). It is clear that Wellington County could have an impact on the vitality of this watershed if resources and activities are not managed appropriately. Interestingly in the OP for Wellington County, they are less prescriptive about communal servicing, allowing municipalities to dictate how development occurs. It states, “Where full municipal services are not provided, municipalities may choose to use private communal sewage services and private communal water services (Wellington County 2010).” They are still following the servicing hierarchy outlined in the PPS, however it will be interesting to determine if this hierarchy is being utilized in practice within Wellington County.
Figure 6: The boundaries of the Grand River Watershed (GRCA\textsuperscript{2} 2015).
2.2.3 Peterborough County

The County of Peterborough can essentially be divided into two main parts: the southern portion where it is predominantly agricultural with small urban communities; and the northern half which consists of various lakes and rivers used primarily for seasonal recreational activities (County of Peterborough 2015). With recreational opportunities comes the inevitably of communal servicing to accommodate these diverse activities. The County’s OP states that communal servicing shall be preferred over an individual site servicing basis (County of Peterborough 2014). The County does however prefer that if communal servicing is pursued, to use innovative technologies that significantly reduce effluent impacts. However, it states, “The County shall require local municipalities to assume responsibility for the long term ownership, operation, and maintenance of communal water supply and sewage treatment systems where required by MOECC” (County of Peterborough 2014). If a system were to default, it appears lower-tier municipalities would be liable if they approve this type of development.

2.2.4 Prince Edward County

Prince Edward County is located along the northeast shore of Lake Ontario. Prince Edward County, unlike the former Counties, is a single tier municipality (Prince Edward County 2015). Prince Edward does cover MRA’s in their OP. It states, “The County will ensure that a responsibility agreement is put in place through appropriate subdivision, development and/or site plan agreements to provide for adequate safeguards ensuring the long term maintenance and capital replacement of communal sewer and/or water systems (Prince Edward County 2006). They acknowledge the potential obligation to have to enter into one of these agreements. It appears that Prince Edward would see
these agreements appearing when other infrastructural agreements were also likely needed to accommodate development.

2.2.5 County of Renfrew

Like the majority of case studies, the County of Renfrew is a two-tier municipality. It has a major water systems running through it, the Ottawa River (County of Renfrew 2015). This water source is of vital ecological importance. Renfrew County’s OP states, “Communal services are the preferred means of servicing development in areas where full municipal sewage and water services are not or cannot be provided and where site conditions are suitable over the long term (County of Renfrew 2012).” In their OP they are following the servicing hierarchy outlined in the PPS. Alike the other case studies, it will be interesting to see if lower-tier municipalities are doing the same in practice.

2.3 Study Rationale

This study is urgently needed for a variety of reasons. There are thousands of private water systems in Ontario and gaining a full understanding of how they operate from a variety of perspective is crucial. First, understanding how provincial policy impacts local development for rural municipalities is an essential part of the policy evaluation process. Determining if the legislation is meeting its objective(s), and whether or not it is doing so efficiently is critical for environmental protection, human health, as well as economic development. The approval and monitoring process for private water systems is distributed among the following: the province (through MOECC and MOHLTC); the municipality (through local council approval; OP, bylaws); as well as the public health unit (PHI’s monitor drinking water systems). Providing feedback on how efficient and effective this legislative framework is for managing water resources is
critical to ensuring that the regulatory process is not impeding sustainable development objectives. Furthermore, by understanding from a private perspective how the regulatory process is affecting developers' abilities to conduct business, opportunities for improvement within the process can be made. Without having an effective approval and monitoring system in place that works for all stakeholders, human health can ultimately be compromised. After the Walkerton crisis, the province had initiated major changes to the way water resources are managed. This study is prudent because understanding how these changes have affected stakeholders allows for recommendations to surface that are more reflective of the practical context of private water system development in rural communities.

2.4 Goal of the Study
The main goal of this study is to determine the impact of regulatory changes in private water system management from numerous perspectives. Ultimately, the research is seeking to gain a better understanding of the approval process in different jurisdictions, as well as the perceived opportunities and costs of private communal drinking water and wastewater system development. This study seeks to explore how important private water systems are to economic development in rural Ontario and how municipalities ultimately seek to manage these developments. Furthermore, the study attempts to determine how changing legislation has impacted the opportunities for this type of development, and to a lesser degree, examining the future factor of changing legislation.

3.0 Contribution to Field of Study and Stakeholders
This section will discuss the various areas and ways that this research will contribute to the overall field of rural planning and development. This is critical to
understand because when conducting academic research it is imperative that it is either building upon what other academics have uncovered, or exploring new topics that have been examined in a limited capacity. The contribution of this research is largely practical as opposed to theoretical in the field of planning. Because of this, applying how this research will benefit stakeholders involved in the field of planning and development is a major emphasis. This section covers the contribution to rural policy, the benefit for decision-makers (planners, council members, watershed managers etc.), as well as the contribution to practicing owners and operators. If all stakeholders have their opinions and experience accounted for, solutions can arise that account for the reality of this type of development and thus, have a better opportunity for success.

### 3.1 Rural Policy

By understanding the approval process across various jurisdictional authorities, not only will any regional differences be unveiled, but also the impacts that policy has on economic development in rural Ontario, where it is of vital importance, can be determined. For example, by inquiring as to the most difficult aspects of the approval process from both a private and public perspective, recommendations on how to streamline the process without compromising public health concerns can be made. Private water systems represent a vital part of economic development servicing private residential developments, commercial businesses, settlements, and resorts in rural Ontario. Ensuring that policy at both the local and provincial scale is reflective of the current and future needs of rural Ontario in order to stimulate and sustain economic development is important to long-term sustainability.
3.2 Decision-makers and Responsible Authorities

The data that has been collected for the purposes of this research is anticipated to shed light on the issues surrounding private water system development that will prove crucial for decision-makers, especially at the local level. The province has significant resources and expertise when it comes to the concerns associated with private water systems. In contrast, at a local level, especially in the rural framework where resources are limited, the knowledge base of the issues surrounding this type of development may be limited. Planners, CAO’s, and CBO’s will benefit, as they will have a better idea of how other municipalities permit this type of development within their own jurisdictions. Furthermore, they will have a better understanding of what a private developer needs to complete before getting approval for their development and the potential challenges they may face. This will facilitate a greater appreciation between these two groups of stakeholders when decision-makers are deciding upon this type of development in their respective jurisdictions. This ensures that effective communication between planning authorities and developers can be established right from the beginning. Local public health units will also benefit from this type of research. Understanding the issues that other public health units are facing and how they are dealing with them will allow decision-makers to reflect upon their own management practices and determine if there are efficiencies that can be captured. Furthermore, for public health units it may be reassuring to see if other units had or do encounter similar obstacles. Council members, whether in single, upper or lower tier municipalities, will likely benefit greatly from this research. Many do not have an understanding of the issues and opportunities of this type of servicing for private development. If they are in a position where they need to decide whether or not to permit a type of development relying upon private servicing,
understanding how other municipalities have framed liability agreements, the stipulations that are necessary, and how the issues other areas encountered can be mitigated will likely prove invaluable information to a decision-maker. Based on preliminary evidence, it appears that there is the potential that decision-makers in some circumstances do not comprehend how critical this type of servicing is to economic development, and that decisions made can be contradictory to economic development policies. Therefore not only is this research important to complete, it is timely as rural Ontario will continue to encounter other factors (depopulation, climate change, increasing cost of services etc.) enhancing the burden on economic development and maintaining existing infrastructure.

3.3 Contribution to Practicing Owners

It is likely that there is a great divergence between the knowledge of private owners when it comes to understanding the regulatory regime for private water system development. This is fair, as private owners have the priority to operate their business, and changes in water resource legislation have been immense and are in a constant state of fluctuation. When speaking with private operators from across Ontario and discovering the problems they have encountered in the approval process, and how well their systems operate, recommendations at both the local and provincial level to help better facilitate the approval process can be made. This is critical as many of these developments represent important tax bases as well as tourist destinations that result in much indirect economic activity (for example tourists visiting a local hamlet when staying at a cottage resort). Ensuring that the policy environment exists to facilitate and not inhibit economic growth for private owners is important to ensure the financial sustainability of a municipality.
4.0 Research Methods

This section discusses in detail the various research methods that were employed in order to collect the necessary data to propose solutions to the planning problems discussed previously. This includes an overview of the document review that took place as well as the key informant interview process.

4.1 Document review

As discussed previously, the data that is currently available on water resource legislation in Ontario relating to private communal development is limited. As a result, the document review involved an examination of the main legislation relating to water system development in Ontario. The purpose for reviewing the associated legislation was to determine where policy efficiencies could be pursued, as well as what are the planning problems the legislation potentially creates. However, the document review itself was insufficient to provide supporting evidence of the planning problems and preliminary interviews were needed.

4.2 Key Informant Interviews

Key informant interviews are an extremely valuable source to gather rich, qualitative data about a subject. Choosing individuals who have immense knowledge on your subject is critically important to getting consistently reliable data. As discussed previously, this research has attempted to gather input from those representing the perspective of the local government, the local public health unit, as well as the private sector. Within each county, in-depth interviews with at least one member from each stakeholder group were conducted. Because interviews with multiple individuals in each case study from different fields were undertaken, the question formulation for each group needed to be reflective of their specific knowledge base. A critical component during
preliminary interviews was determining whether or not the key informant interview questions were adequate and reflective of the current approval context.

4.2.1 Public Health Unit

Knowledgeable individuals from public health units across Ontario were participants in this research. These representatives were vital stakeholders to interview as changes under the *Health Protection and Promotion Act* had impacted them substantially, expanding their mandate by requiring them to monitor water systems. Most public health units deal solely with drinking water systems falling under Ontario Regulation 319/08. Many of the systems they deal with are the focus of this research (those with six or more service connections or those that are open to the public). However, MOECC also has the responsibility to monitor communal systems regulated under Ontario Regulation 170/03 that are also discussed in this research. Because of the difference in oversight, whenever conducting interviews with representatives from the public health unit, it was stressed repeatedly when asking questions for participants to focus their responses only on those communal type systems within their scope. Although some public health units still deal with some wastewater systems in collaboration with MOECC, the majority have divested from this responsibility.

4.2.2 Municipalities

Members who were interviewed from municipalities included elected officials, planners, CAO’s, and CBO’s. The individual that was interviewed depended upon which one was most knowledgeable. If available, multiple interviews from the municipal perspective were undertaken. Questions attempted to determine the municipality’s perspective on this type of development. Opportunities for these developments as well as their associated risk were also a major point of discussion. Also, the financial risk for
municipalities was a component that often arose. This type of information was critical to determine from a municipal perspective because understanding how they value this type of development, whether positively or negatively, provides insight for developers regarding how likely a development requiring communal services is to be approved at the local level. Furthermore, understanding how a municipality is adjusting to changing legislation at the provincial level is important to ensure that municipalities, especially in the rural context, can cope with the changes in a sustainable way.

4.2.3 Private Operators

With private owners, the main component that needed to be addressed included how they perceived the approval process. This is where problems with the approval process and potential efficiencies that could be captured would be discussed. It was anticipated that private owners, in many cases, will likely have a more intimate understanding of the requirements for their business under new legislation and will be eager to discuss where the approval process can be more efficient. Questions were formulated to see how private owners feel their relatively new relationship with the public health unit is for monitoring drinking water systems, as well a reflect how effective they felt the approval process for wastewater systems was with MOECC. Furthermore, gaining insight into the actions that a private owner takes to manage their systems provides data relating to the quality of private services. This is important as there is a public perception in some cases that private water management means cutting corners in order to achieve a greater profit. In order to determine if this perspective is valid, further understanding of the managerial practices of private owners is necessary.
5.0 Analysis
This section details the analysis of the data that has been collected through the aforementioned research methods. This section will go into extensive detail regarding all of the data that has been collected. This includes an overview of the analytical process; the limitations that were present for the data collection and analysis; as well as the analysis itself.

5.1 Overview of the Analysis Process
Data was collected through key informant interviews and a document review. This research is a form of manual qualitative data analysis, which for the purposes of this paper will be referred to as a thematic analysis. From the key informant interviews, the data was then transcribed into a narrative of the approval process, how private water systems operate, as well as their perceived opportunities and costs by grouping the transcribed data into main themes that would be common across the interviews. These themes were then categorized into larger, broader themes to provide a more thorough analytical framework. Each theme has been analyzed very carefully. It contains all of the information from across the different regions. It is important to note that the regions themselves are not making up the basis of the analytical framework, but rather the themes make up the framework. The themes are then grouped according to the three main stakeholder groups identified earlier. This allows for an organized attempt to provide the input from these three main perspectives to surface, while discovering common themes among these groups and across jurisdictions. Once this has been completed, differences in the perspectives can be recognized and thus, potential sources of conflict and agreement. Understanding these sources of conflict and agreement can be extremely important, not only for decision-makers, but also those stakeholders in the private sector.
who are attempting to get approval for this type of development to facilitate economic objectives.

5.2 Limitations of Data Collection Process and Analysis

Whenever reviewing the analysis of research, addressing the limitations is essential to providing recommendations for further research and how to overcome issues that this research encountered. For this research, there are several limitations that must be addressed in order for accurate conclusions to be reached. Because there have only been relatively minor amounts of research on this topic completed to date, the fact that there were limitations was not surprising.

5.2.1 Limitations in Background Data

The background review for this research mainly consisted of the changes in legislation that had occurred as a result of the Walkerton crisis. Because of this, when formulating interview questions, the foundation was based largely on anecdotal evidence as opposed to peer-reviewed. Furthermore, to in essence, “fill in the data gaps,” preliminary interviews with subject matter experts were conducted to determine what the main planning problems were. Although these preliminary interviews had yielded interesting themes that would need to be examined in a broader context, the specific planning problems identified earlier had changed slightly between the preliminary interviews and the data collection process. Ultimately the planning problems changed slightly to be more reflective of the practical context of communal water system management. Specifically this was regarding the balancing act for municipalities between liability and economic development initiated through MRA’s. MRA’s became a main point of discussion during the main interviews as opposed to the preliminary ones.
5.2.2 Conducting Interviews with Subject Matter Experts

Unfortunately there is not an abundance of individuals who feel comfortable enough with this topic to speak as subject matter experts. Particularly, experience from a council perspective was difficult to gather. This is likely because in the fall of 2014, there was a local municipal election that occurred around the start of the data collection process. Many elected officials did not have experience dealing with permitting or not permitting this type of development. Furthermore, because of the major changes that were happening at the time for councils, many members were still attempting to get caught up on other pressing concerns regarding local development. It was necessary in many cases to speak with planners, CAO’s, and CBO’s, who had more experience with this type of development as opposed to elected officials. Attempts to overcome this by reaching out to former elected officials were unsuccessful.

Private operators were also difficult to reach. Because of confidentiality concerns, it was difficult to find owners to speak with by gathering information from governmental agencies. For example, the responsible authorities (MOECC, MOHLTC, public health units etc.) that have access to a list of private owners were typically unable to provide the contact information, as it would be considered an invasion of privacy. The only way to receive this data in some cases would be a freedom of information request, and due to time constraints, this was not feasible. Therefore, reaching out to these individuals consisted of searching for campgrounds, resorts, cottages, and trailer parks through public domains. Because of this, commercial businesses that have a private water supply were difficult to detect. Furthermore, many private owners have many other obligations (especially for campground operators getting ready for the next season) and as a result, were extremely busy and did not have time to participate. It is also necessary to
acknowledge that different private operators will obviously have different views and perspectives of the responsible authorities. Although problems with the regulatory process were pursued for this research, potential bias as a result of a bad experience for a private operator could be a factor in some of the responses. This needs to be accounted for when making overall, broad conclusions relating to the associated decision-making authorities as this situation could be considered an outlier.

5.2.3 Water Resource Legislation “Rollout”

Water resource legislation within Ontario has been relatively slow to develop and implement. There are still water systems that are unmonitored, and have yet to register and gain appropriate water numbers. It is important to point out that changes in water resource management initiated under the Safe Drinking Water Act are still in the process of being implemented. As a result, many subject matter experts interviewed were only able to comment on a specific aspect of the approval process, as their experience was limited. This was extremely apparent for discussions surrounding MRA’s. There were many who had learnt some information relating to them by their own prerogative, but did not have experience going through the process. Some had completed theirs years ago, whereas others were in the process of completing their MRA. Because of this, evaluating the overall success of these agreements, in the long-term anyway, is rather limited. However, even if many are in the initial stages of dealing with some of the changes associated with water resource legislation, this still presents interesting opportunities to ensure that in the future, current issues are addressed more efficiently or avoided completely.
5.3 Data Analysis

This section of the paper is dedicated to the presentation of the data that was collected throughout the duration of this research. Throughout the fieldwork, it became increasingly clear that there were three main perspectives regarding this issue: the municipality; the public health unit; and the private sector. Note it is important to understand that the provincial government (MOECC and MOHLTC in particular) are not included because the discussions are largely surrounding impact at the local level as a result of changing provincial legislation and regulations. Thus, a focus at the local level is how the data will be presented. There is a fundamental coding framework that has been established in figure 7 that gives an overview of the basic manual qualitative analysis process for this research. The data has been grouped according to the secondary codes that were most prevalent within each stakeholder group. Any relevant differences between the different regions will be considered in section 6.0, during the presentation of the results and discussion.
## Coding Framework

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<thead>
<tr>
<th>Primary Coding</th>
<th>Secondary Coding</th>
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<tbody>
<tr>
<td><strong>1.0 Municipal Responsibility Agreements (MRA)</strong></td>
<td>1.1 Regulatory Framework/Liability Breakdown</td>
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<tr>
<td></td>
<td>1.2 Perceived Benefits of MRA</td>
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<td></td>
<td>1.3 Perceived Drawbacks of MRA</td>
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<td>1.4 MRA’s and Condo Development</td>
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<tr>
<td><strong>2.0 Impact of Private Servicing Development on Municipality</strong></td>
<td>2.1 Risk of a defaulting system</td>
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<tr>
<td></td>
<td>2.2 Potential Costs and Benefits to the Municipality</td>
</tr>
<tr>
<td><strong>3.0 Understanding the Private Perspective</strong></td>
<td>3.1 Difficulty and costly to conform to regulatory requirements</td>
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<td></td>
<td>3.2 The approval process and discussing market opportunities</td>
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<td></td>
<td>3.3 Public reaction and quality of Private Services</td>
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<tr>
<td><strong>4.0 Impact of Private Servicing On Public Health Unit</strong></td>
<td>4.1 Transition for Public Health Unit during Downloading of Responsibilities</td>
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<tr>
<td></td>
<td>4.2 Relationship with local operators</td>
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<tr>
<td><strong>5.0 Provincial Support</strong></td>
<td>5.1 Local support during/after transition</td>
</tr>
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<td></td>
<td>5.2 Conflicts between rural Municipalities and the PPS</td>
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<td>5.3 Provincial Impact on Private Operators</td>
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<tr>
<td><strong>6.0 Ecological Considerations</strong></td>
<td>6.1 Private Servicing Impact on Water Quality and Quantity</td>
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<td></td>
<td>6.2 Private Owners Considering the Environment in the Design of their Systems</td>
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**Figure 7:** The coding framework that served as the basis for the qualitative analysis.
5.3.1 Examining the Municipal Perspective

This section will go into detail regarding the data that was collected from the municipal perspective. This includes those in positions ranging from council members to CBO’s. Understanding how private system development impacts municipalities is a critical component to this research. If municipalities can be obligated from the province to take over a private servicing system, it becomes an important issue for planning, development, finance, as well as public works. Water servicing is an important component for any community and must be managed accordingly in both an environmentally and economically sustainable method.

5.3.1.1 Municipal Responsibility Agreements

When discussing the concept of private communal water system development within a municipal officials respective jurisdiction, the discussion of MRA’s was common. It is an extremely important component relating to this type of development as they are becoming more prevalent within southern Ontario, whether it be for a new development or to bring an existing development coming into compliance. Understanding how these agreements are structured and how they are perceived is critical in evaluating their effectiveness.

5.3.1.1.1 Regulatory Framework & Liability Breakdown

In all jurisdictions that were examined, all had policy regulations that were intended to dissuade the proposal of development requiring communal servicing. This would be accomplished in many cases through updated OP’s that would direct more dense development to areas that would already be viable for servicing through a more centralized system. Within the rural context, there was quite a bit of divergence regarding the amount of internal expertise when it comes to drinking water and wastewater
servicing. This, along with the reluctance to approve developments requiring a MRA was the standard reasoning for why development would be directed to these areas.

There were indications within all jurisdictions that facilitating development to tie into existing municipal systems was the preferred method of servicing. In all areas, the only cause of the municipality entering into a MRA was for existing systems that were in one of two scenarios: they were renewing their approval from MOECC for their water system and a condition of the approval was to get a MRA established with the municipality; or an existing system was proposing additions to their current activities, which required further MOECC approval, triggering the requirement of a MRA. The most common occurrence for this was trailer parks that were converting from a seasonal status to a year round status. There were indications from officials in both southeastern Ontario as well as south central Ontario that there are current trailer park establishments that are operating under a seasonal approval, but are in all essence a year round establishment. There were suggestions from multiple individuals that this could trigger more potential MRA’s in the future for a trailer park development. However, it was discussed that the extent of the number of MRA’s being triggers is largely dependent on MOECC monitoring.

Of the municipalities that had MRA’s in place, there was agreement regarding the most difficult component of the regulatory process; negotiating the reserve fund and the terms surrounding it. There are various liability structures that can be utilized including holding a reserve fund in perpetuity, annual fund contributions, upfront development costs that are returned at a certain stage, or a multiple ownership (and therefore multiple payer) type scenario. Of these structures discussed, reserve funds ranged from around $50
000 to $500 000, depending upon the extent of liability the private owner is taking. Determining how much should be set-aside in a reserve fund and what structure it will be held under was a difficult component. When it comes to a new development that has been proposed, there were indications from one individual that they had seen reserve fund requirements as high as $1 000 000 to ensure a system is developed accordingly. One of the main areas of reluctance from the municipal perspective to enter into these agreements was the individual stakeholder ownership scenario. From the municipal point of view, it appears that when there is a single owner, enforcing accountability measures becomes more difficult. One MRA developed in southeastern Ontario is based on a multiple ownership scenario where over two hundred individual cottage owners can be individually taxed, and have a reserve fund established for any potential issues that may arise with the operation or repair of a system. It was noted that if this system would have been individually owned, it likely would have been more difficult to get approved and had more stringent terms surrounding the reserve fund negotiations. For example this may have been when certain fees that were held for a time would be returned (if ever), something that could potentially have an impact on a developer’s ability to finance a project.

There were some scenarios where a MRA was not needed because of a different liability structure that had already existed. One operator within south central Ontario had a long-term maintenance agreement in place. This includes not only water supply and wastewater treatment servicing, but also other components such as lawn care, snow removal, and road maintenance. From the municipality’s perspective, because this is a scenario with a trusted owner with a good track record, there have been no concerns. An
MRA was not necessary in this case as an adequate reserve fund and the liability framework had been adequately established under a long-term maintenance agreement.

5.3.1.1.2 Benefits of Municipal Responsibility Agreements

The only benefit that was seen from the majority of municipal officials from entering into a MRA was the increased financial security that would be established through the reserve fund. Many, from both south central and southeastern Ontario, did not view many benefits for a municipality to enter into a MRA. Of some of those who had an MRA in place, there were indications that the current financial framework established does not fully consider all of the costs of water servicing. For those that were established years ago, they were developed with little recourse for renegotiations based on changing circumstances and current maintenance levels. This is something that some municipal officials indicated would be beneficial in the future development of any MRA’s.

There were indications from one individual with municipal experience from southeastern Ontario that MRAs, when properly formed, provide guarantees for municipalities that communal water systems will be developed, maintained, operated and monitored in a sustainable method. This individual indicated that, from the municipal side, with traditional engineers overseeing these proposals, there is the view of private operators as, “incompetent” because of historical concerns. In their experience, the municipal official suggested most operators are professional businessmen who are willing to comply with current and future regulations. There is the potential that when assessing these applications, municipalities need to view this as a planning concern as opposed to an engineering one, and see the value in accepting this type of development beyond the potential risk they may or may not incur. Without recognizing the value of this type of
servicing and embracing the benefits of MRA’s, this individual believed that there can be implications for economic development.

5.3.1.1.3 Drawbacks of Municipal Responsibility Agreements

One of the major drawbacks perceived from municipalities is a lack of skill and experience. In the majority of cases, within the rural scope there was little expertise regarding water supply and wastewater treatment. Therefore approving any type of development where the municipality could potentially have to take over the utility in the future was not an appealing situation. Furthermore, if they are not developed with appropriate liability mechanisms, then there may not be adequate funding in case of an emergency. In one case from southeastern Ontario, one municipal official felt that if the system with a MRA were to default, then the reserve fund at its current level is more of an emergency or contingency fund. They felt that it would not cover any long-term operating costs or any capital repairs. Additionally, almost all municipal officials noted that if they are taking over a system, there is likely something wrong with it. And again, one of the largest concerns with developing a MRA is striking a balance in determining an appropriate reserve fund amount.

Some municipalities also indicated that one of the main drawbacks of a MRA is it allows the province to completely divest from communal water system management in rural Ontario. Many had discussed the current lack of provincial support in drafting a MRA. As such, numerous municipalities have no educational resources to refer to. The province does have the expertise in dealing with these agreements, and many municipalities indicated that their support in the process may make municipalities less reluctant to enter into one of these agreements.
5.3.1.1.4 Municipal Responsibility Agreements and Condo Development

Municipal officials from south central Ontario indicated that they did not believe a condo development being proposed would be more beneficial to the municipality and thus, more likely to be approved when requiring a MRA as opposed to a trailer park or campground requiring similar agreements. It was their stance that any type of development requiring a MRA is discouraged though policy and therefore, one is not likely to be approved over another. When discussing the concept with southeastern Ontario officials, there were suggestions that this type of development may be more likely to be approved. This is largely because of the added accountability structure that is often in place for condo developments. There is a condo corporation that establishes a reserve fund, and each owner contributes to it. The amount in the reserve fund is also assessed and adjusted accordingly depending on the state of the shared infrastructure. If a condo development and the associated accountability structure (typically a condominium corporation) is executed in a way that covers the liability as well as maintenance concerns of a water system, there were more positive inclinations from officials in southeastern Ontario regarding its chances of being approved. Furthermore, each unit can be taxed to a larger degree. For a comparable trailer park development, the tax structure in Ontario differs and as a result, municipalities do not collect as much from this type of development. When there is a multiple ownership type scenario, it seemed to reduce the risk perception for a municipality in most cases.

One subject matter expert had encountered a case from southeastern Ontario where a condo type development, according to MOECC, was not required to enter into a MRA because all of the liability measures that would have been required were already covered under the condo corporation agreement. According to this individual, this
accountability framework provides an answer to the question of who is going to have a long-term inherent interest in the maintenance and monitoring of this utility.

5.3.1.2 Private Servicing Impact on Municipality

Understanding how municipalities viewed private servicing in their municipality was a critical component. Although some of this was covered in the previous section related to MRAs, it is necessary to get a full picture of private communal servicing as not all communal systems are required to enter into a MRA. This section will detail regarding how municipalities perceive the risk of a defaulting system or an order from MOECC to take over a system, as well as the perceived financial costs and benefits of private communal systems.

5.3.1.2.1 Risk of a Defaulting System

When discussing the concept of risk relating to a defaulting system, it came down to the amount of expertise that each municipality had. Some had minimal expertise as they did not have much municipal water infrastructure and did not have need for the associated staff. Others relied upon private partners to provide servicing to the residents within their jurisdiction. Needless to say, for those municipalities that had less expertise, typically more prevalent in southeastern Ontario, the risk of a defaulting system was much higher, and thus, when faced with the proposed development, would be cautious. However, even for those jurisdictions that did have enough expertise to take over a defaulting system (if necessary), there was still a major reluctance towards this type of development. Even though they did have the ability to cover a system, they would not want to and felt that it would pose a major strain on their public works. There appeared to be a perception of private owners as not having an inherent interest in managing a water system in the long-term.
5.3.1.2.2 Perceived Financial Costs and Benefits for the Municipality

Aside from trailer park developments, most municipalities acknowledged the financial benefits in terms of tax revenue that can be collected from private developments that rely upon communal servicing. A private owner is under the obligation to abide by provincial regulations and provide and treat water for their associated development, while the municipality relinquishes the cost of this service and can still collect tax revenue. However, there were also many individuals who suggested that there is a liability cost that must be accounted for as well related to this type of development. The only cost that the municipality would have in terms of monitoring of the water systems would be indirectly through the partial funding they provide to the health unit. There were no indications that this was an excessive cost for the municipality before or after the changes in regulations.

There were no comments regarding any indirect economic benefits that these developments, many of them being tourism related, provided for the municipality.

5.3.1.3 Impact of Regulations on Private Owner/Operators

Those from the municipal perspective did have ample discussion regarding their thoughts on the regulatory changes impact on private operations, as well as how it affects market and development opportunities within their respective jurisdictions. It will be interesting to determine if municipal officials and private owners have similar perspectives regarding the impact of regulatory changes on the private sector. If their views are inconsistent, there is potential for communication concerns to arise between these two stakeholder groups. This could potentially strain the approval process as neither group understands the others perspective in determining appropriate conditions of development.
5.3.1.3.1 Difficult and Costly to Conform to Regulatory Requirements

Many municipalities acknowledged the significant changes that most operators (specifically those that operate smaller water systems) had to encounter during the changes in legislation. From the municipality’s perspective, the cost of infrastructure was the most excessive. This is thought to be because some of the private owners did not have any water treatment infrastructure prior to the changes in legislation, and as a result of these changes, were required to construct the necessary infrastructure and thus, incurred capital expenditures. There were comments regarding some owners who have gotten certified themselves as a way to keep costs down. Although expensive, some indicated that if private owners invest in newer technology, the systems are smaller thus requiring less land, and their long-term reductions in operating and maintenance costs could prove economically viable. Technology was identified by some as a potential revolution for the water treatment industry, and was especially important for future wastewater system development in rural Ontario. For more complex developments however, there were suggestions that there are associated logistical concerns that the municipality incurs. This includes the planning and development review process, as well as a public hearing in some cases. There was a preference to pass these administrative costs on to the developer.

One individual indicated that a major potential cost for private owners comes in the form of engineering reports. This individual suggested that they had witnessed instances where engineering consultants who understood the regulatory hurdles involved in approving communal services would submit inferior engineering reports as part of an application package. When the municipality makes comments, the owner of the system then needs to pay additional engineering fees for resubmissions. Regardless of the necessity for resubmission, there were statements from numerous owners regarding the
large cost of engineering fees to even propose a development on communal servicing, without even accounting for the associated cost to go through the local (and provincial) approval process.

5.3.1.3.2 A Barrier for Development or Market Opportunity

All of the municipal officials did not feel that private communal systems, under the current regulatory framework, pose market opportunities for private owners. They were rather viewed as a barrier to development. They pose a risk for municipalities and as such, are seeing developers attempt to navigate the approval process in various ways. For instance, it was noted in nearly every jurisdiction that private developers would purposely propose development on individual servicing as opposed to communal as a way to avoid the regulatory burdens associated with communal system development. When they see the costs that a municipality would charge, it serves as a major deterrent. In terms of subdivision development, planners will typically see developers altering their subdivision plans to accommodate larger lots for servicing, ultimately reducing their ability to make a profit. In another circumstance, one official noted a developer attempting to put forth a phased development plan in order to avoid the regulatory requirements of MOECC to enter into a MRA.

There was discussion surrounding the larger, private utility servicing companies in Ontario that are in the business of operating water systems. This comes in the form of various frameworks ranging from an operating partnership to completely owning a private water system and covering all components related to approval, monitoring, and managing. Many of these companies operate throughout Canada as well as internationally. There were indications that operating within the regulatory climate of Ontario was more difficult than internationally, which could have an impact on the
profitability of the companies. Attempts to discuss the market opportunities within Ontario with an official from one of these private companies were made, unsuccessfully.

5.3.1.3.3 Public Reaction and Quality of Services for the End User

All municipalities indicated that there have been noticeable improvements in the water services as a result of the introduction of regulations, specifically for the smaller operators who were likely unregulated previously. Some commented that it likely varied between operators, but for the most part they believed that they attempt to provide quality service for their end users. Most felt that they would be able to provide this service at a more cost-effective rate than municipalities, as they would have less costly expenditures surrounding staff. One official indicated that up to 80% of a municipalities budget is for staffing, an area where a private establishment could significantly reduce costs.

There have been no public complaints, nor any public reaction, rather positive or negative, relating to any development with specific reference to the communal servicing component. All officials believed that it is essentially a case where if the end users do not have any issues with their systems, they do not complain or ask any questions in relation to their management. Occasionally, there were indications that if an end user had a problem with their system, because of a lack of education about the servicing, they would complain to the municipality when it was a concern for the private owner. However this was not common.

5.3.1.4 Provincial Impacts

The amount of provincial support was a critical concept to explore with the subject matter experts. Understanding whether or not the current and historical levels of support were adequate, as well as the type of support from the province and whether it was beneficial is important when evaluating how changing regulations have impacted
municipalities. Understanding provincial concerns such as the level of support, conflicts with the PPS, as well as the provinces impact on private operations will allow further information relating to the effectiveness of new regulations to surface.

5.3.1.4.1 Municipal Support During and After Regulatory Changes

During the transition, the province provided support for three years in terms of technical expertise for local officials. Many believed that the regulatory changes, specifically those downloading monitoring responsibility to the public health units, was an efficient policy change that decentralized this task to the local level, cutting costs for MOECC, while the health unit did not require significantly more resources. Because the PHI’s were already visiting many of these facilities that they now had to conduct water testing at, they could theoretically monitor them on a more cost-effective basis than the province.

Many were more critical of the province in terms of current support for development that would require a MRA. This is a policy framework that many municipalities are not familiar with. There is no provincial support that any municipal official was aware of in terms educational or financial resources for the development of a MRA. Even though private operators get their approval from MOECC, if a municipality enters into a MRA, some municipal officials became unclear about what further relationship the private owner would have with MOECC. Many indicated that if there were some sort of provincial assurances regarding support for operating a defaulting system that was required to enter into a MRA, they would be more likely to approve development of that type. Many noted that since they operate within a rural municipality and expertise within the municipality is often lacking, that operational support from the province as opposed to financial support in terms of MRA development would be more
beneficial. With no provincial support, many signified that the municipality will pass on the liability costs (typically through a reserve fund requirement) to the developer, who would likely pass them on to the end user if this type of development were to ever be approved.

5.3.1.4.2 Conflicts Between Rural Municipalities and the Provincial Policy Statement

All municipalities indicated that there are conflicts between the PPS and planning and development in rural municipalities. Specifically, rural municipalities had extreme difficulty making their OPs conform to the PPS in terms of the servicing hierarchy discussed in the background section of this paper. Most municipalities, if development cannot be directed to already serviceable areas, prefer individual servicing as opposed to communal, conflicting with the hierarchy structure set out in the PPS. Some said that the PPS was developed for development in the Greater Toronto Area (GTA), and is not nearly as applicable to rural communities. It is very difficult to provide centralized servicing for all developments, and with the additional regulatory barriers and the liability of a potentially defaulting system associated with communal development, individual servicing is the only other viable option. There were some that felt the PPS views servicing as, “black and white” when it is not an all or nothing scenario. If a site is suitable for individual servicing in some areas, and communal in others, having innovative combinations not addressed in the PPS could provide some flexibility for rural municipalities. Some felt that the PPS proposing communal servicing over individual servicing is in theory more reflective of a sustainable development scenario. However, in practice, many suggested that the regulatory barriers in place do not allow this type of development to be feasible.
5.3.1.4.3 Provincial Impact on Private Operators

Because of the changing provincial regulatory requirements, many operators incurred costs through increased servicing requirements, and have more difficulty getting the large development requiring communal servicing approved. When they are approved, they will likely be very costly which is almost always borne by the end user. There have been some operators that have even based plans for servicing, whether it be for current development or future expansion, on tying into a centralized system to avoid the regulatory requirements.

There were some who discussed the province’s tendency to overestimate and in essence require that the treatment systems be, “over engineered.” One example of this was recognized when the province was determining nitrate requirements. The nitrate dilution must be below a certain level at the owners property line, as theoretically this is the closest adjacent properties well’s could be located. A consultant may say that a certain number of hectares is needed to effectively dilute the nitrate of an associated wastewater system, and in some cases it was noted that the provincial official had overestimated the consultant’s figure by as much as 500%. This can significantly impact the type of treatment system an owner would need. This was not only a concern for owners with relation to wastewater management, but also drinking water. For instance, several owners indicated that the calculation used for the amount of water needed for certain operations (typically through a permit to take water), would be significantly overestimated by MOECC staff. For example, at a campground operation, they would assume full occupancy, at peak level for extended durations that were much higher than what the owner would actually experience. Owners indicated that these measurements are
not reflective of the practical context within which they operate their respective businesses.

5.3.1.5 Ecological Considerations

Discussing the ecological considerations of private water system development is often a major point of contention for opponents of this type of development. Therefore it is essential to discuss this with all stakeholders to see how the systems are performing. Understanding the perspective of municipalities when it comes to ecological impacts of communal systems is critically important because if there is a divergence between their view and private owners perception, it could indicate that there is a certain level of misinformation within the stakeholder groups. The main discussions from the municipal side were related to water quality and quantity, and considering the environment in the design of a system.

5.3.1.5.1 Private Servicing Impact on Water Quantity and Quality

There were no indications from any municipal officials regarding proven impact on water quality or quantity as a result of private water servicing systems. There have been no public health concerns related to any quality issues stemming from a private system. There were some officials who had suspicions that private wastewater treatment as a whole was having an impact on algae blooms, or water quality overall, however it is very difficult to trace this to one operator or group of operators. Many believed that there has been an increase in quality as a result of the regulations for smaller operators. Within Ontario, the source of water is excellent in many places so quality concerns are not very prevalent. Also, municipal officials suggested that there are large quantities of water so water quantity issues are not very frequent.
5.3.1.5.2 Considering the Environment in System Design & Operations

Most officials believed that private owners did an adequate job at maintaining environmental quality in their operations. They all consider the geology, a very critical component to the effectiveness of a system. There were no indications of any users proactively taking environmental considerations such as climate change into consideration for their systems. More were concerned with abiding by the current regulatory requirements.

5.3.2 Examining the Public Health Unit Perspective

This section of the data analysis will focus solely upon the data collected from the public health units. Through the changes in regulations, the public health units were the ones who took on much of the monitoring responsibilities for small drinking water systems. Understanding their perspective is essential as they are the individuals with the most relevant, “on the ground” exposure to private systems and their operators. Furthermore, they will have intimate knowledge of how these systems are operating as they are conducting the risk assessments and following up with the private operators.

5.3.2.1 Impact of Regulations on Private Owner/Operators

The health officials in many cases are likely to have a more familiar relationship with the local operators, and thus, have first hand exposure regarding the impact that the regulations had for small drinking water system operators. Understanding their perspective and determining if it differs from that of the municipalities and private operators could yield interesting results for recommendations and potential points of conflict.
5.3.2.1.1 Difficult and Costly to Conform to Regulatory Requirements

There was an acknowledgement from public health officials that although the regulatory requirements for systems operating under Ontario Regulation 319/08 are less onerous than those operating under Ontario Regulation 170/03, those operating under the former are having more difficulty conforming to the regulatory requirements. There was discussion that this is because many of these operators were not regulated previously, or had to invest in capital infrastructure to treat water that they did not previously treat, and therefore it was a steeper learning curve. For the larger systems operating under Ontario Regulation 170/03, they would have more invested in water treatment and operating.

The most extensive costs were incurred for private owners initially during the risk assessments that took place for the first time. When a PHI issued a directive for a system to be brought into compliance, this would typically be sampling or infrastructure related, which would be costly for the owner. Those from the public health unit acknowledged that a cost for the operator to incur was the sampling requirement at a third party lab. Especially in southeastern Ontario, where owners may have to drive longer distances to labs further away, this was a larger cost. The public health unit officials were unaware of why the province required operators to test at a third party lab as opposed to the public health unit. There has been one case amongst the public health unit officials interviewed where one private owner from southeastern Ontario had refused to pay to have their samples tested at a third party lab. This case is now going through the court system in order to get the private owner to comply. All public health units said that it is a rare case for owners to refuse to comply, and although some may comply reluctantly, they ultimately comply. There will always be a variation in the competence of the owners, as well as how serious any given owner will take the regulations. Some understand that they
are providing water to the public and that this is a serious operation that can pose serious consequences for both human and environmental health.

5.3.2.1.2 Public Reaction and Quality of Services for the End User

Many of the public health officials believed that as a result of the regulations, the quality of the services for end users has likely increased as added attention to infrastructure and monitoring is taking place. Although some felt that the private owners would likely pass along the associated costs to end users, others felt it may just be swallowed up in operational costs and result in minimal changes for an end user. Especially the systems that were previously unregulated, all felt they are certainly providing better services. There were no indications that the public had presented any concerns related to the private ownership model for water utilities. Some public health officials commented that users would be surprised to get a formal boil water advisory from the public health unit. Because these owners were serviced by a previously unregulated system, they would have never received any government orders in the past.

In terms of the actual quality of the services being provided, most officials believed that it would vary between the establishments based upon the owners. The diligent owners (or operators) will be sampling frequently, in many cases more often than the public health unit requires. However, some question how much this is actually occurring overall. Although they are not required to constantly sample, it would contribute to providing better quality services and reflect being proactive. When officials attempted to evaluate further on how the new regulations are impacting quality of services, it becomes difficult as they have only completed the initial risk assessment and not much follow up has taken place.
5.3.2.2 Impact of Private Water Systems on Public Health Units

Understanding how the public health units have dealt with the changes in regulations and how they view their current relationship with private owners is essential. This is a realm that they did not formally have to deal with extensively in the past, therefore understanding how they have dealt with the formal transition will be important. Furthermore, there has been discussion in the past of local public health units dealing with wastewater systems as well. If this monitoring framework is to be evaluated, it would be of critical importance to consult with the public health units and gain insight into whether or not this responsibility is applicable to their mandate.

5.3.2.2.1 Transition of Public Health Unit During Downloading of Monitoring Responsibilities

It is well known that through Ontario Regulation 319/08, the monitoring of various private drinking water systems was downloaded from the province to the local public health units. All health unit officials indicated that it was a difficult transition (at least to some degree) during the time that they became responsible for monitoring water systems regulated under Ontario Regulation 319/08. What they all indicated to be the most difficult was the time line set on conducting the initial risk assessments. MOECC had guidelines as to when the initial risk assessments needed to take place by. Although there were engineering consultants provided by the province during the transition, which were commonly depicted as useful, it was suggested that there were initially too many systems to reach with too few complementary resources. The lists provided by MOECC were often inaccurate, having outdated addresses and addresses of systems that had been abandoned or decommissioned. This made the process of conducting the initial risk assessments and narrowing down the actual systems that they would be responsible for much more difficult and time consuming. Within southeastern Ontario, one public health
unit indicated that the initial list given by MOECC was around 800 systems, and ultimately this was decreased to approximately 400. In another public health unit from southeastern Ontario, the initial lists suggested about 4000 systems, which was initially brought down to 1500, and currently stands at approximately 380. Furthermore, aside from the inaccurate information provided, it was a learning curve for many of the PHI’s that were involved in the monitoring of water systems, as it was something they may not have previously encountered (or at least not to this degree).

Although all public health units implied that during the initial transition in 2008, it was a steep learning curve and was extremely difficult to conduct the initial risk assessments within the allotted timeframe, all also indicated that in its current status, the downloading has been a success. Now that they have had time to adjust and adapt, the transition has been gauged as relatively successful. Most indicated that it is more cost-effective to have the public health units monitoring as they are already visiting these establishments under different circumstances. Some of the public health unit officials also suggested that they are currently operating in a sustainable manner and that the workload for the PHI’s is now much more manageable than during the initial transition. However, there were indications that provincial support may be lacking in some cases. Further discussion surrounding provincial support is contained in section 5.3.2.2.3.

5.3.2.2.2 Relationship with Local Operators

It is important to discuss with the health officials how they assess their relationship with the local operators. Because they work with them on a more regular basis and on a more personal level, it is important to understand how they perceive this relationship. Responses regarding this concept were rather consistent across all public health units surveyed. All felt that taking a more proactive approach and being willing to
work with operators during the transition allowed for a more cooperative environment during the initial introduction of Ontario Regulation 319/08. Different strategies employed included having open houses, creating information packages for owners, as well as, “how to guides” regarding common elements such as sampling, monitoring, and reporting. Although there were some private owners that were more uncooperative than others in terms of conforming to the public health units directives, for the most part private owners across the province at the time were willing to conform to the regulatory requirements.

Because of the close relationship with local owners, one question that is sometimes asked of public health units (from owners) is why, for the most part, they do not monitor wastewater systems. Most of the public health unit officials felt that monitoring wastewater systems would not directly fall under the public health mandate. Their main concern is human health, where wastewater systems may be more accurately categorized as environmental health, making MOECC a more credible authority. Furthermore, many felt that PHI’s are already trained regarding food contamination, and a lot of the information and skills are transferable to water monitoring. All felt that if they were to be responsible for wastewater monitoring, it would likely require significantly more resources, staff, and training to effectively adopt compared to the drinking water monitoring.

5.3.2.2.3 Provincial Support

As indicated previously, there were significant, “growing pains,” as one public health unit officials described it, during the transition of Ontario Regulation 319/08. There is a mixture of public health units who feel that the current funding level is adequate and some who feel it is not. For one public health unit in southeastern Ontario,
they are currently funded for less than one full time equivalent. In the opinion of this individual, it would take at least 1.5 to 2 full time equivalents to adequately complete the requirements for this job. One health unit examined did not give the responsibility of monitoring to one or two individual PHI’s, but rather all PHI’s, and then divided up the systems based on geographic territory. The individual from this particular health unit indicated that each official has approximately 35 systems to look after. Although it is more reasonable now that the initial risk assessments are complete and the frequency of monitoring and follow up is less time consuming, it is still questioned whether or not this is enough support.

There was one public health unit from southeastern Ontario that suggested technical support from the province would be helpful in many cases. For instance, if a trailer park development has 30 homes with five wells, effectively fragmenting the system, it operates under Ontario Regulation 319/08 as opposed to Ontario Regulation 170/03. Because of this it still may be a more complex system. The fact that health units may be responsible for systems of this nature, according to this individual, is reflective of a need for further provincial support due to the lack of experience within the public health unit. Another health unit official suggested that although MOECC provided engineering consultants for the first three years of the transition, after this period MOECC was supposed to be available for technical advice. However, this has yet to manifest.

5.3.2.3 Ecological Considerations
   The public health units will have some important views when it comes to the discussion of ecological concerns. As they work closely with the water operators, it is likely they would be aware of any issues related to water quality or quantity. Although it
is acknowledged that their mandate is public health as opposed to environmental health, it is believed that they will still have valuable insight into this important factor of water resource management.

5.3.2.3.1 Private Servicing Impact on Water Quantity and Quality

Determining the impact on not only water quality but also quantity, as the two can have consequential impacts on one another, is of valuable importance when examining private water management in rural Ontario. Since the public health units began monitoring the systems through Ontario Regulation 319/08, none have indicated that there is an exclusive impact on water quality or quantity as a result of the private operations. Some public health unit officials had suspicions that a combination of private systems could potentially be having an impact on water quality, however it is extremely difficult to trace this to an individual user. Overall however, aside from the occasional adverse sample result, private systems are not having a negative impact on water quality or quantity.

Since the introduction of the new regulations, many public health unit officials signified that there has been a noticeable increase in the water quality standards. Many were convinced that the improved attention to the smaller systems and private owners in terms of training, sampling, and monitoring, has helped to improve the water quality. One official from southeastern Ontario suggested that, “All it takes is correcting a few of the bad apples, and then you will see a major impact on water quality in terms of algae blooms, as well as nitrates in the water.” However, health officials suggested that another factor of private systems to consider is the scale and severity of the potential impact on water quality and quantity. Within Ontario, water resources are ample as many officials advised. Many areas are fortunate with excellent natural filtration through sandy soils, as
well as large quantities of water, and therefore even a poorly functioning system may not have a large potential to contaminate water. Some areas from southeastern Ontario suggested that in rare circumstances, there have been issues with water quantity for rather shallow wells, however not directly attributable to any private system but rather a combination of all water users. When there are issues with water quantity, public health officials indicated that this can pose threats for water quality. Nonetheless, all comments from the public health officials suggested that these are rare circumstances and overall, private systems are not having a significant impact on water quantity or quality.

5.3.2.3.2 Considering the Environment in System Design & Operations

All public health officials had determined that considering the environment was something that most if not all private owners had done. However, there would be a significant variability between owners when it comes to considering factors such as impermeable surface, severe weather impacts, as well as geology. Although all had at least considered the environment in their design, none of the systems encountered had taken a look at what impact climate change could potentially have on their communal system. Many public health unit officials said that most systems are still getting used to being under the new regulations and are not considering the potential impact of factors such as changing weather patterns. There were also indications from public health unit officials that private owners only really considered the impact of their operation as opposed to the cumulative impact of multiple adjacent operations on the ecology of a given area. Although they are taking the environment into consideration in the design and operation of their system, public health officials indicated that there is potentially more that can be done to ensure ecological vitality is not threatened.
5.3.3 Examining the Private Perspective

This section of the analysis will cover all of the data that was collected from the private stakeholders who agreed to be part of this research. It is of critical importance to understand from the perspective of this stakeholder group how the changing regulations have impacted them and their ability to operate a business in rural Ontario. Economic growth is of critical importance for any community, however in the rural context it is even more so a necessity as financial constraints impact a rural municipality’s ability to operate in a sustainable method. This data analysis will also provide interesting insights into how the private sector views the various issues discussed previously compared to the municipality and public health units. Where this is a significant difference between the perspectives, it will indicate that further research into these areas may be needed. These differences and their implications will be discussed in the results and discussion sections.

5.3.3.1 Municipal Responsibility Agreements

It is important to discuss this concept with private owners as they are the ones who will actually be entering into these agreements with the municipality. Understanding how they view them and how the municipality views them will potentially provide insight into why entering into these agreements is a long, complex process and appears to require constant negotiation. Although not all private owners interviewed had been involved in a MRA or had even heard of a MRA, interesting insights into how they are viewed can still surface.

5.3.3.1.1 Regulatory Framework & Liability Breakdown

Some of the owners that were interviewed were operating seasonal systems, and as such under MOECC procedure D-5-2, a MRA is not required. There was one operation from south central Ontario that did not have a MRA, however was not required to apply
for one as they had a long-term maintenance agreement in place with the municipality. This agreement included water supply and private sewage treatment along with other considerations including road maintenance as well as lawn care. This was structured to have a $500 000 reserve fund, however this was for all services not just water servicing. The vast majority of owners did not have any type of liability agreement in place with the municipality in the event that their system defaults, and reverts to the municipality under a MOECC order. There were various owners who were also unaware of what a MRA was, how they are structured, or when they are required by the province.

5.3.3.1.2 Drawbacks of Municipal Responsibility Agreements

As the majority of owners had not experienced a MRA thus far, and many were unaware they even existed, there were only a select few operators who could provide any detail regarding potential drawbacks. One operator from southeastern Ontario suggested that one of the main drawbacks is setting the appropriate financial security rate. This is extremely difficult, as the municipality and private owner will have differing views regarding what is considered a fair amount. Furthermore, this owner indicated that many council members have little to no experience dealing with the type of development that requires a MRA, and therefore cannot adequately assess an application that may require one. Another owner from south central Ontario suggested that, from the municipality perspective, they did not foresee any benefit. All it would do is shift liability to the municipality in the case of a defaulting system as opposed to shifting liability to the province (this would be assuming MOECC does not issue an order). This individual believed that, especially in a rural municipality, the expertise of the local government in dealing with larger water servicing systems is limited. Therefore, they did not see any logic in requiring them to have responsibility in the event of a defaulting system. From
the private perspective of potential developers, the requirement of a MRA shows how expensive the risk of changing legislation can be. When this is now required by MOECC, it puts a large financial and logistical strain on the owner to get this agreement in place.

5.3.3.1.3 Municipal Responsibility Agreements and Condo Development

As many owners were unaware of any of the components of a MRA, again there were only a select few who had comments regarding MRAs and condo development. For one individual who had been looking to expand their operation by developing condominiums that would require a MRA, there was one factor that they considered to be of high importance; communicating with builders. The vast majority of builders who have experience in the condominium industry have only developed in an urban context where servicing would be done through a centralized, in most cases municipally run system. The owner felt that most are rather oblivious when it comes to developing privately managed on site communal systems. They also commented that when proposing this type of development, one would need to minimize the, “scare factor” with builders who are not used to constructing large condo developments outside city limits.

In terms of MOECC and a municipality approving a condo development over another type of development where both require a MRA, some owners indicated that since condos can be individually taxed, it would be more likely to get approved by the municipality. Furthermore, the fact that there will be a condo corporation collecting fees, establishing a reserve fund for their assets, and reviewing that reserve fund on a consistent basis to ensure it is adequate relieves some of the perceived liability (mostly encountered at the local level). There were suggestions that if the security components of a condominium corporation are done correctly, they would cover most, if not all of the stipulations found under a MRA.
5.3.3.2 Private Servicing Impact on Municipality

When interviewing the private owners, understanding how they feel the municipality either benefits or incurs costs as a result of private system development will be an important part of the discussion. If there is a variance between how the municipality views this type of development and how the private owner views it, this will provide important insights into how future development relying upon this servicing strategy will fare. This section will mainly address how private owners view the potential impact of a defaulting system, as well as how they perceive the costs or benefits accrued by the municipality as a result of approving this type of development.

5.3.3.2.1 Risk of a Defaulting System

It is noteworthy to understand how a private owner views the potential risk of a defaulting system for the municipality, as they are the ones who would ultimately be relinquishing control of the system for one reason or another. None of the private owners interviewed believed that their system was at any risk of defaulting and that the risk of MOECC issuing an order for the municipality to take over their system was minimal. Most owners were quite knowledgeable about their systems and those that were not had hired a water servicing company to carry out tasks such as routine maintenance. The owner who had a long-term maintenance agreement in place believed that a large reason why their system was unlikely to default was because of this agreement. Every month under this agreement, 7% of maintenance fees would go into a reserve fund that pays for any capital repairs. Because of the framework of this agreement, the municipality would be more than covered in the event of a potential infrastructure or maintenance issue. Another owner from southeastern Ontario had met with officials from the municipality to discuss the concept of risk in these types of development and discuss scenarios from
other jurisdictions. However, this owner advocated that the municipal engineers and lawyers had proposed that the risk is too great for the municipality under the terms the private owner had suggested. The owner also mentioned that too much risk coverage from the municipal side most defiantly reduces the development opportunities which can have further implications for both social and economic sustainability.

5.3.3.2.2 Perceived Financial Costs and Benefits for the Municipality

All private operators felt that their operations provide a vital source of direct revenue to the municipalities, mainly through the collection of property tax and development fees. Within some municipalities in southeastern Ontario, there were indications that the development fees for an expanding operation can be extremely excessive at times, impacting an owner’s ability to stay competitive. The majority of owners also indicated that not only are these direct sources of revenue collected by the municipality, many of them ran campgrounds or resorts, which provide ample indirect revenue through tourism related activities that are not part of their operation. Some owners suggested that lowering development fees in some situations, perhaps when a communal system is required, would help alleviate some of the added regulatory costs associated with things like MRAs. Many also suggested that municipalities need to understand that these types of operations that require a communal water system are vital to the furthering of sustainable development objectives in rural communities.

5.3.3.3 Impact of Regulations on Private Owner/Operators

This is potentially the most revealing section for the private owners. These are the individuals that are impacted by various regulations implemented by differing levels of government. Understanding how they view the regulatory process and which areas are ultimately most difficult to navigate could prove invaluable in terms of increasing the
efficiency and relevance of the approval process without compromising human or ecological health. The main areas of focus include an evaluation of conforming to the changing regulatory requirements, how they view private communal systems in the market place, as well as the quality of services being provided for the end user.

5.3.3.3.1 Difficult and Costly to Conform to Regulatory Requirements

Almost all owners indicated there was at least one area of the approval process that was excessive or unreasonable. In terms of the changes that came through Ontario Regulation 319/08, the most excessive cost was the extremely frequent water quality testing that was conducted after the initial risk assessment from the public health unit. There were indications that this cost used to be covered at the public health unit, but then by MOECC's direction, it became a requirement for independent third party labs to test the samples. The owner has to cover the cost of this and in some cases since these systems are located in rural municipalities, the closest lab is quite far, adding costs for transport and staffing. Most said that currently, it is manageable as the testing requirements are less onerous than during the initial implementation of Ontario Regulation 319/08.

When it comes to wastewater system development under the Ontario Water Resources Act as well as Procedure D-5-2, many said that the engineering costs are extremely excessive. Creating the blueprints for a system, based on MOECC requirements, is essentially equivalent to, “starting from scratch” each time in terms of designing the system. Hiring a hydrogeologist to conduct various studies to prepare the required reports was also an extremely excessive cost. Although these reports are necessary and neither the province nor municipality controls what private consulting firms charge, some mentioned that there are other ways such as tax breaks or reduced
development fees or levies to attempt to offset some of the associated costs. It was a common concern among owners that the overall costs combined reduce the ability of a business to be competitive and thus, reduce the economic potential for new operations or expansion of existing ones.

5.3.3.3.2 A Barrier for Development or Market Opportunity

Some owners felt that proposed development requiring a communal water system, under the current regulatory framework in Ontario, served as a barrier to development. Some owners that had knowledge of the requirements relating to a restrictive MRA had identified this factor as one of the main barriers to communal system development. One owner indicated that he understands why a municipality would be hesitant to enter into one of these agreements for an old, deteriorating system. However in the case of a new development that will be undertaken sustainably with monitoring and reporting requirements set out in the MRA, the owner felt that by not embracing MRAs, they are significantly reducing development opportunities in southeastern Ontario. There were also discussions about larger private utility companies providing these water services in Ontario and abroad. It was suggested that they have a more difficult time turning a profit within Ontario compared to the international market. Almost all operators viewed the component of providing water services to their end users as a reality of business rather than an opportunity to generate revenue and potentially make a profit. At best, owners indicated that they were likely just covering their costs of providing water servicing at the current end user rates. Many felt that there are significant development opportunities in rural Ontario, however but the added regulatory costs associated with communal water system development could serve as a potential deterrent to further investment.
5.3.3.3 Public Reaction and Quality of Services for the End User

Most private owners suggested that the vast majority of end users do not concern themselves with the specifics of their servicing unless there is a problem. Because of this, most indicated it is difficult to make comparisons and judge the quality of their services. However, most believed that they could provide good quality services at a lower cost than a publically run system. The most common reason for this was due to the multitasking ability of many owners to take on operating responsibilities (or another staff member would do so). All owners understood their responsibility to provide clean water to end users and to reduce the ecological harm as a result of discharging effluent to the environment. As one owner in southeastern Ontario commented, “I drink the water here, my kids drink the water here, it is extremely important that we provide high quality water services.” Another owner from south central Ontario had gone as far as investing over $100 000 in backup generators so that when the power goes out, (as it had in the past due to a deep freeze) and the wells shut down, the backup generators will keep them running and providing water. However, most owners suggested they suspect that the quality of services will vary from owner to owner. Some even indicated that they knew of operators who were not abiding by the regulatory requirements. For example, they would not be registering their water systems and obtaining an appropriate water number. Some expressed a level of dissatisfaction that owners who are following the regulatory requirements are incurring many added costs without much support, while some who are non-compliant do not get the same level of monitoring from relevant authorities (MOECC and local public health unit in particular).
5.3.3.4 Impact of Private Water Systems on Public Health Units

The relationship between the private owners and the local public health units is a critically important one. There must be an effective level of communication between each stakeholder group to ensure all understand their responsibilities under the relevant regulations and fulfills them. Any differences in how public health officials responded to similar questions will provide interesting insight into this relationship during the results and discussion section.

5.3.3.4.1 Relationship with Local Operators

All owners from south central Ontario did not indicate that they had any issues with their public health unit officials. For the most part, they have been helpful during the transition in regulatory requirements and provided adequate educational resources to the owners benefit. Within southeastern Ontario, all owners had suggested that there have been at least one issue with the public health unit. There was one case where the relationship with the PHI and owner was in a rather dire state, with little trust between the two stakeholders because of the perceived excessive testing standards. However, the owner still indicated that during the transition the public health unit as a whole was still very helpful and provided ample educational resources. Other owners from southeastern Ontario felt that their public health unit was lacking when it came to preparing them for the regulatory changes.

5.3.3.5 Provincial Impacts

Through significant regulatory changes the province can have substantial impacts on a private owner in numerous practical contexts. Understanding how the private owners feel the province impacts their ability to run a business provides important insights into the development opportunities for rural Ontario.
5.3.3.5.1 Provincial Impact on Private Operators

For all of the owners interviewed, most had wastewater systems regulated under MOECC and water systems regulated under MOHLTC (manifested through the public health unit). However, one owner had a drinking water system operating under Ontario Regulation 170/03, which is MOECC’s responsibility. In terms of the wastewater systems, all owners indicated that there is no support from the province in any aspect of their operation, and that the onus is on the owner to ensure they are keeping up with current regulatory changes. Some systems have never encountered an MOECC inspector, while others had suggested they had encountered one between the last five and ten years. Some owners suggested that they were required to file annual reports to MOECC, however even when they have been up to three years behind, MOECC had not followed up. Most view the province as an overarching approval authority that is far separated from the owner and their operation. When MOECC has been on the owner’s premises to conduct an inspection, many have said that when they are calculating factors including amount of land needed for effluent discharge, or amount of water used per day, they significantly overestimate, ultimately incurring added costs for the private owner. The owner of the water supply system regulated by MOECC under Ontario Regulation 170/03 said that MOECC sends out an automatic reminder telling them to renew their permit to take water and push rather hard to ensure owners comply, but absolutely nothing having to do with the wastewater system monitoring is required. Most owners commented that they conduct the work in terms of sampling and monitoring for their wastewater systems, but just have no guidance on who or how to report it. One owner suggested that when an MOECC officer came out to inspect their wastewater system, he told them they needed to file annual reports, but had no information on the format or content of these reports.
There were suggestions that resources in terms of educational as well as financial to help with small water systems should be provided by MOECC to encourage private owners to continue to upgrade infrastructure with better technology and thus, reducing the impact on the environment.

5.3.3.6 Ecological Considerations

This is a very important stakeholder group to discuss the component of ecological considerations for communal systems. There is a notion in the development community that some private owners of water servicing systems are what’s referred to as, “fly-by-nighters,” and do not have a long term vested interest in things like ecological integrity, but rather short-term profit. Understanding how private owners view their responsibilities towards ecological sustainability and human health will help determine whether or not this perception is valid.

5.3.3.6.1 Private Servicing Impact on Water Quantity and Quality

All owners indicated that their operation does not have any impact on the water quality or quantity. Some suggested this is attributable to the excellent design of their system utilizing the perfect geology in their area, while others attributed it to the large water quantities available which would significantly dilute any potential contaminant, maintaining water quality. All monitor their systems on a regular basis and have never had any adverse test results.

5.3.3.6.2 Considering the Environment in System Design & Operations

Most owners had indicated that they utilized the geology of the surrounding area in the consideration of the design of their wastewater systems. Most had also considered factors such as the amount of impermeable landscape in the design and operation of their systems. None had indicated that they have had any adverse impact on the environment.
or ecology of the surrounding area. Some suggested that they did not have any issues updating a system to suit the ecological considerations in a more sustainable way, but some added support from the municipality or province would be needed for anything drastic.

6.0 Results and Discussion

This section will review all of the results of the previous data analysis. Trends in the data will be revealed as well as discussions surrounding their implications to the broader objectives of the research. This section is depicting what the data retrieved in the analysis means for the stakeholders involved, which will allow for recommendations to the planning problems to be made. This section is where the discussion regarding what the data means in the practical context occurs.

6.1 Examining the Regulatory Barriers

One common discussion among participants of the key informant interviews was a discussion of the regulatory barriers, specifically for private development and investment in rural Ontario. Because of the various changes in legislation discussed previously, there have been numerous barriers perceived by almost all stakeholder groups.

6.1.1 Restricting Development in Rural Ontario

It was mainly private stakeholders and municipal officials who could render an opinion regarding any regulations impacting development opportunities in rural Ontario. The public health unit officials did not have much experience dealing with an issue of this nature. It is interesting that both stakeholder groups found MRA’s specifically to be a major barrier to development in their jurisdictions. However, both groups viewed it from
a different perspective. Private stakeholders felt that by not embracing an MRA, a municipality was significantly reducing the development potential in their jurisdiction. Local government officials however, indicated that they view communal systems as development that is posing a risk to municipalities. So now private developers are instead proposing development on an individual servicing basis. This type of development may not be as profitable, and thus, not as sought after. It seems that there are those in the development community that want communal servicing. If a municipality had more resources when crafting a MRA, it may be possible to approve this type of development while minimizing risk. All owners felt that providing water to the end users is essentially a cost of business, rather than an ability to generate revenue. It may be the complex (at times) regulatory requirements to provide water servicing in rural Ontario serves as a barrier to rural development, hence impacting a municipality’s ability to operate and develop sustainably.

6.1.2 Increasing Costs for Private Owners
Specifically referring to MRAs, both private stakeholders and municipal officials indicated that a development requiring one would likely increase costs for developers. Most private stakeholders were unaware these agreements even existed, representing a hidden cost in the approval process. This could have significant ramifications for those looking to propose new or expanding developments that may require a MRA to be entered into. An owner may not be looking to expand their existing development for example because of the perceived barriers that must be dealt with in the regulatory process. One main cause of this is determining the adequate level of funding that must go into a reserve fund (for a MRA). The inability to consistently strike an agreement between the local government and the private developer ultimately negates the impact
that the MRA was intended to have; increased financial and environmental sustainability of communal systems. Through the key informant interviews we have seen quite a divergence regarding the amount and framework of the reserve funds, which indicates that there is inconsistency among different jurisdictions in permitting this type of development. As a result, we are seeing two different types of scenarios: one where municipalities reserve funds are too small to sustainably manage a system in the long-term; and another where the proposed reserve fund is too extensive for a developer to cover while maintaining profitability. As a result, development objectives that rely upon communal servicing appear to have a more difficult time getting through the approval process.

Both the public health unit and municipal officials acknowledged that, for small water systems, the changes in legislation through Ontario Regulation 319/08 created substantial costs in some cases for private water system owners. Many of these costs were incurred at the initial onset of the regulations when PHI’s conducted the first risk assessment. Some individuals had to become certified owner operators, while others had to make considerable investments in infrastructure in order to treat their water accordingly. Interestingly, when speaking with owners, many had indicated the ongoing costs of sampling and testing at a third party lab as the most excessive (for drinking water systems). For those owners who had been through the process of getting approval for a wastewater system, many indicated that the engineering costs of the reports needed were excessive. This means that for private owners, there is now another major component of operating their business that must be accounted for in attempting to remain profitable. Many had indicated that the continuing increased costs for development in rural Ontario
could impact their decisions on whether or not to expand. It becomes a difficult situation as a municipality is attempting to promote sustainable development while managing risk, while a private owner is attempting to navigate the complex regulatory approval process and still turn a profit. If the costs of development were reduced, there would likely be a short-term loss of municipal revenue. However, there is also potential of more development occurring and thus, a larger tax base for a municipality overall. Communal servicing is a vital component to sustainable development. It allows more dense development to occur which would be beneficial to a rural community attempting to promote development with a high potential tax base (condos for instance) while minimizing impact on adjacent rural lands (which are typically agricultural or of more ecological significance). It appears, for year-round communal systems, if a private owner enters into an appropriate MRA (where financial risk and economic development has been fairly addressed), there is potential for a private owner to save money. Communal systems for instance, for a housing developer, allow smaller lots to be established, as the need for onsite servicing is not required. The risk for the municipality is also minimized, while they get to collect the direct revenue and indirect benefits associated with this type of development.

6.1.3 Taking on Additional Public Risk

From the municipal perspective, especially in rural Ontario, it was identified that many municipalities do not have expertise in dealing with communal type systems. Because of this, when a development requiring a MRA surfaces, without increased support from the province, municipalities as well as private stakeholders indicated that the local level public sector is unwilling to take on any additional risk. It was interesting that some private stakeholders had the same position as the municipality; entering into a
MRA allows the province to divest from the management requirements of the communal systems resulting in increased liability at the local level that they may be unable to cope with in the case of a defaulting system. Although there is some consistency in the viewpoint between private stakeholders and municipal officials, there is still immense tension in some cases between these stakeholders when a developer attempts to propose a development requiring a MRA. This indicates that there may be a lack of understanding from the municipal perspective on how to properly formulate a MRA that balances economic risk with development necessities. As a result, private stakeholders have to alter their development plans and sustainable development may be compromised.

Determining how a municipality views the threat of a defaulting system was largely dependent on how much expertise that municipality had in water servicing. Because the context is rural Ontario, there was tremendous variability between municipalities when it comes to this expertise. Those that already had established municipal water servicing indicated that they were confident their staff could take on this added responsibility should a system default, where municipalities with little expertise indicated they would be in a difficult situation. However, it was interesting to note that although some municipalities felt they could cover a defaulting system, this was not enough assurance for them to approve and even promote development requiring communal servicing. As a result, some municipalities have become restrictive of this development through their OP’s. There was an interesting (although not unexpected) divergence between how the municipal officials and private stakeholder viewed the potential of a defaulting system. All private owners interviewed indicated that they did not believe their system had a chance to default. All felt that they were responsible
owners and understood their objective to provide clean water to their users. This
difference in perspectives manifests in a frustration for both sets of stakeholders.
Municipalities are unlikely to approve this type of communal development, in part
because of the perception with private owners not having an inherent long-term interest,
which ultimately impacts development opportunities and the ability of a municipality to
generate revenue and provide adequate services for its residents. Private owners feel that
they are responsible owners who do have a long-term interest in the vitality of water
sources and are having difficulty getting further or new development plans approved by
the municipality if communal servicing is involved. There is a clear lack of
communication between the stakeholders that must be addressed to eliminate the notion
of the owner who is a, “fly by nighter” with no interest in the long-term sustainability of
the community. Assurances from the provincial level to municipalities to facilitate the
approval of these systems could show the benefit of this development and prove at the
local level that responsible owners are more prevalent in the current regulatory context.

6.2 Examining the Regulatory Benefits

Although there were numerous regulatory hurdles that all stakeholder groups had
to encounter or manage, many interviewees had also indicated the benefits that have
resulted from increased regulatory efforts. Although all had indicated that the process is
far from perfect and there are areas that could be improved, there was a major
acknowledgement of the benefits the regulations have brought.

6.2.1 Increased Security Through Municipal Responsibility Agreements

One of the discussions that surfaced through interviews with municipal officials
was the potential benefits of entering into a MRA. All had suggested that there would be
increased financial security in the event of a defaulting system. However the risk is still
there when it otherwise would not have been. Only one individual had suggested that the MRA could be used as a vital tool to ensure a system is developed sustainably, and that this needs to be viewed from a planning viewpoint rather than an engineering perspective. The inability to acknowledge the potential benefit of entering into a properly crafted MRA for a municipality shows a lack of understanding from a municipal perspective, which in turn represents a failure of communication between the provincial and local governments. Local municipalities need education and support regarding how to implement a MRA without compromising economic development or incurring local risk. Without this, municipalities will continue to craft OPs that conform to the servicing hierarchy of the PPS, but in the reality of the approval process, reflect a different context. The province needs to acknowledge that by not supporting and encouraging municipalities to enter into MRAs, they are discouraging the implementation of the PPS and sustainable development objectives related to servicing. For example, on a large scale if individual on-site servicing is the basis for development in rural Ontario into the future, it could have more significant ecological impacts than effective communal development managed through MRAs. One case discussed by an individual suggested that a condo-type development did not need to enter into a MRA because all of the necessary components that an MRA would require had already been established under a condo corporation. Developers need to understand what these components are, and attempt to incorporate as many of them as possible into development plans in a viable, innovative method.

6.2.2 Increase in Service and Water Quality

One of the major benefits from the increased regulations identified by all three stakeholder groups was the increased confidence in water quality. Mostly the public
health unit officials noted this. One interesting comment from private owners was that they were actually happy that regulations were coming in to ensure proper water treatment because they had known of operators who were inadequate in the past that would now be required to increase the quality of their services. This is interesting as many public officials view private owners as having less inherent interest in the protection of water resources from a watershed management perspective. It appears however, of those interviewed, that they have a more vested interest than once thought. Potentially one of the major concerns that need to be addressed with municipal officials is that many private water system owners are professionals and understand their responsibilities as an owner, and that this notion of “fly by nighters” is inaccurate. One of the major objectives of changing legislation for water resource management in Ontario was an increase in the water quality of supplies. It appears that the regulations have succeeded, at least with respect to communal system owners, in increasing water quality. All owners interviewed had run efficient operations and understood their obligations to protect water and provide adequate services. There needs to be a greater effort on the part of the public health units as well as MOECC to identify the owners who are operating within the regulatory requirements and those that are not to direct resources accordingly.

6.2.3 Potential Opportunities for Condo/Communal Style Development

One interesting discussion that arose between municipal and private stakeholders was the potential opportunities for communal style development. Some municipalities had even indicated that the MRA(s) they had approved were likely permitted because it was a multiple ownership type scenario. Although this was a more prevalent notion among municipal officials in southeastern Ontario, it still represents a potentially important strategy for developers. If a development is proposed that has a communal
ownership framework, it may have a better likelihood of reducing the risk from a municipal perspective in terms of a defaulting system. It appeared that one of the main reasons for this was because there was a perceived reduction in risk when dealing with multiple owners with a vested interest rather than an individual owner.

One of the interesting points of difference between southeastern and south central Ontario municipal officials was their view regarding condo development and its likelihood to get approved. Those in southeastern felt that it had a greater likelihood of getting approval, whereas those in south central Ontario typically felt that no development requiring a MRA is likely to be approved. This does not definitively prove that a condo development requiring a MRA is more likely to get approved in southeastern Ontario as opposed to south central, but it is interesting to view from a geographic context. For instance, it could be that rural communities in closer proximity to the GTA (those in south central) may not benefit as much from this dense development (or perhaps may not even want) than the more sparsely populated southeastern Ontario. Determining the difference between these regions viewpoints and if this difference is perceived on a larger scale would be a revealing area to research further.

6.3 Understanding the Provincial Role

The provincial role was a subject that arose frequently among all stakeholders as the province has historically had a significant role in water resource management in Ontario. Seeing any divergence in the opinions of the varying stakeholders will give indications as to whether or not concerns regarding provincial support are warranted.

6.3.1 A Difficult Transition for Health Units

One of the most impacted stakeholders regarding the changes in regulations initiated by the provincial government was public health units. All public health units
implied that it was a very difficult transition and a lot of added responsibilities for health inspectors to cover. Although they suggested that for the most part, they are currently operating in a sustainable manner, the difficulty during the transition points to potential problems that can be avoided if any future downloading of monitoring responsibilities is to occur. Currently, MOECC is responsible for monitoring larger drinking water systems as well as communal wastewater operations. It was estimated by public health unit officials that about two thirds of public health units do not monitor wastewater systems at all, primarily due to a lack of expertise and resources. If similar monitoring requirements for wastewater systems or larger drinking water systems were to be imposed on public health units by the province, the difficulty of the initial transition can provide important insights into the effects of downloading responsibilities. Public health unit officials would need significantly more resources as well as training to ensure they become subject matter experts with respect to wastewater monitoring. Furthermore, enhanced communication between MOECC and the public health units would need to occur to ensure that the local needs are being met accordingly (staffing, resources etc.). During the downloading of monitoring for smaller water systems, public health units had access to engineering consultants for up to three years. A similar setup with longer consulting times would need to occur for a similar downloading with respect to wastewater systems as the engineering stipulations are more complex. Many private operators indicated that they would rather see local public health units monitoring wastewater systems than MOECC because of the perceived impersonal approach taken by the provincial officials. If this were to occur, public health units would need substantial funding to ensure they can operate effectively and proactively. It would again likely be a rather steep learning
curve, however alike with drinking water systems, many PHI’s are already out conducting site visits to private establishments. If they could monitor wastewater systems at the same time, it would likely reduce overall monitoring costs associated with wastewater system development in rural Ontario in the long-term (when accounting for local and provincial expenditures).

6.3.2 Conflicts between Municipal Official Plans and the Provincial Policy Statement

Many municipal officials had identified a perceived contradiction between the servicing hierarchy outlined in the PPS and the regulatory process in place to approve water systems. For example, if the requirement to enter into a MRA for a proposed development is rejected at the local level, the development will likely go ahead on an individual servicing basis. Many municipalities, regardless of the contextual specifics of an application, already have a negative view towards entering into a MRA and potentially increasing local liability. This ultimately conflicts with the servicing hierarchy outlined in the PPS because rural municipalities (in part because of the regulatory framework established) will promote individual servicing as opposed to communal. The implications for this are vast. As identified by many private owners, communal type development is a necessity in rural communities and in many cases, from a developer’s perspective, allows a development to become viable (whether that be financially or ecologically). Although not the main intent of this research, some public health unit officials indicated that individual systems typically perform more poorly than communal ones. If rural municipalities are promoting individual services, there is potential for new developments to have a greater ecological impact compared to the same development with communal servicing. This contradictory approach from the province (having policies that appear to
reduce municipal approval rates of communal services (Procedure D-5-2) while promoting communal servicing over individual in the PPS) reflects a broader problem with the PPS many municipal officials outlined. It has been established under a framework more reflective of urban planning as opposed to rural or regional. The servicing hierarchy is but one component of the PPS that is not feasible in rural communities. This could inadvertently (from the provincial perspective) cause many rural municipalities OP’s to be in nonconformance with the PPS, simply because the specifications are not feasible in a rural context. If the intent of the servicing hierarchy in the PPS is to ensure sustainable, consistent development across Ontario, the regulatory context surrounding private communal water system development reflects but one contradiction.

6.4 Communication Between Stakeholders

Potentially the most revealing section of the data analysis was in the form of the inconsistent communication between the three stakeholder groups. All stakeholder groups must understand the role each has in water system development and be able to observe the situation from multiple perspectives as each are critically important. Highlighting the main concerns with communication could help streamline the development process and reduce the amount of frustration some stakeholders encounter.

6.4.1 At the Local Level

Municipalities (excluding the tax circumstances surrounding trailer parks) understand the value in terms of taxation that these developments provide. However, many also suggested that the potential liability that is associated with communal development must be considered in the cost-benefit equation. This is where there was quite a divergence between the private and municipal stakeholders. All private operators
felt that their operation not only generated direct tax revenue for the municipality, but also indirect revenue through aspects such as increased tourism. There was a clear lack of communication in private developers signifying that the benefits of their development would outweigh any potential liability for the municipality in the event of a defaulting system. Furthermore, it appears to be difficult for private owners to signify their vested interest in the long-term sustainability of the water servicing system to municipal officials. This lack of communication ultimately has impacts on how much and what type of development in a given jurisdiction is approved.

There were, for the most part, much higher levels of communication between the public health units and private owners as opposed to municipalities. This was mainly during the downloading of monitoring responsibilities where ample educational and training resources were typically provided. However, this could be a result of the nature of this relationship where health related visits (monitoring, public calls, food inspections etc.) might be more frequent than visits with the municipality. The only time municipalities and private owners engage (for the most part) is during the initial approval of the development, or when they are entering into a MRA. Although many public health officials believed that they would not be suitable to monitor wastewater systems as this is more of an environmental health as opposed to public health issue, their already established relationship with local owners could prove beneficial. If adequate funding from the province was made so public health units could take over the responsibility of monitoring wastewater systems, it is very likely that this would produce more positive results than the current situation where a lack of MOECC monitoring is occurring. A
more localized approach was preferred by private owners, and if implemented, could reduce long-term monitoring costs.

6.4.2 At the Provincial Level
The lack of communication between the province and municipality ultimately results in an inability of municipalities to understand communal system development. This is a fair characterization, as many rural municipalities do not have the expertise required to manage and fully evaluate communal water systems. They need support from the province that has dealt with these developments historically. Specifically, the support is needed immediately for developments required to enter into a MRA. If there were some type of educational resource where council members, planners, engineers, and lawyers, could refer to in order to view how other jurisdictions have crafted these agreements, there my be less hesitation. Furthermore, if a record was maintained to ensure the results of these agreements were monitored, it is possible that more municipalities would enter into these agreements, and thus, more capable of reflecting the PPS in their OPs. The implications of not having this type of resource available and maintaining the status quo will likely yield more municipalities being more restrictive of approving development requiring communal systems.

There was diversity among public health unit officials as to whether or not they had sufficient communication with the province. For those that did have good communication with MOECC for instance, when dealing with some of the larger systems under Ontario Regulation 319/08, they could get advice and expertise in an efficient manner. This communication is essential and without it, PHIs could have difficulty in fulfilling their mandate. A greater effort to make provincial resources available to public
health units when dealing with larger systems would likely increase the efficiency and effectiveness of the monitoring process.

There were suggestions from both municipal officials and private owners that the communication between the province (MOECC) and private owners was minimal. Many owners had been monitoring and recording their water (typically wastewater) systems, but had no requirements for reporting. This lack of communication gives an example of how wastewater systems in the province are operating. Many owners had indicated they had no experience with MOECC for their wastewater systems, aside from the odd letter in the mail. Minimal owners specified they had an inspection completed, and for those that did, they suggested that when MOECC came out there were significant overages in the various calculations they would conduct to determine treatment requirements. There appears to be a lack of presence from MOECC overall for wastewater systems. This could suggest that another, more localized institution could more efficiently conduct the wastewater system monitoring requirements. Without adequate and clear oversight, a proactive approach to monitoring and managing private water systems in rural Ontario cannot be achieved.

7.0 Recommendations
Establishing recommendations that are relevant to the research problems identified initially is an essential part of the research process. The recommendations made are the result of the initial research conducted on the policy, the preliminary interviews, the key informant interviews with subject matter experts, as well as the qualitative data analysis. The following recommendations are made in effort to increase the efficiency of communal water system management in rural Ontario:
• Develop a comprehensive listing of different MRAs in conjunction with municipalities and the province to let municipalities know how they have been framed for different scenarios – also follow up with those that have implemented these MRAs to see how they are doing and how some of the shortcomings can be addressed as policy evaluation in this context is critical (as an effort to reduce the hesitancy of municipalities to enter into a MRA needs to be made);

• Acknowledge the importance of the development requiring communal servicing at the local level and work with developers to alleviate costs when possible – waiving some development fees would be a incentive for the larger operations, but a provincial role in aiding municipalities when they approve this development could ease the reluctance of approving communal systems;

• Make educational material and expertise readily available to rural municipalities and health units (as necessary) in the event that drinking water systems do default and MOECC has issued an order for them to be managed at the local level;

• Research further into the larger private utility providers to see if a framework to partner with smaller operators who will need MRAs can be formulated – this could reduce some of the liability from the municipal side to have a professional company accountable;

• Review the process conducted by MOECC officials in determining the various “right sizing” components addressed at the time of wastewater system monitoring and approval to see that if the current calculation method is consistent with third party engineering firms; and
• Conduct a thorough review of the monitoring responsibilities for water systems regulated under Ontario Regulation 170/03 as well as the *Ontario Water Resources Act* to see if there is a need for a change to the current framework of provincial oversight.

**8.0 Conclusion**

Private water servicing in rural Ontario represents a vital service for development opportunities that would not exist under a public ownership framework. Furthermore, it allows the expertise of the private sector to be utilized. Changing legislation is a risk that any private owner needs to be aware of as it can cause them to incur costs relating to the operation of their system that were previously unnecessary. Changes in drinking water legislation have taken on a proactive approach through conducting risk assessments. Public health units have, after a few years of transition, adapted to incorporating the responsibility of drinking water system monitoring into their everyday operations. The changes in legislation have impacted the way that a private operator who was previously unregulated operates their business. Changes in the approval process of wastewater system development have had substantial impacts on communal sewage system development. There is currently no effective monitoring system in place for communal wastewater systems, and as a result, determining the exact impact of their operations is difficult. However, the regulatory process to get these systems approved appears overburdened with preventative tactics that are at times, acting as a deterrent to development. Private sector developers have recognized these changes, and as a result may tailor their plans to ensure the least burdened path forward. There are preliminary indications that condo developments may have an easier time developing a private
communal sewage system because of the accountability structure represented through the condo corporation, the associated property tax with high density housing, as well as the requirement to have a reserve fund. Further research into which types of developments that require an MRA that are most likely to succeed, and whether or not there are regional differences, would likely prove valuable information for developers in Ontario. Communal servicing options are of vital importance to rural development opportunities in Ontario. There needs to be recognition of this fact from all stakeholders, and this needs to be reflected in the approval process.
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